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Volume: 29, 1887

S. B. Parsons

THE

GARDENERS' MONTHLY

AND

HORTICULTURIST.

DEVOTED TO

HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

EDITED BY

THOMAS MEEHAN,

STATE BOTANIST OF PENNSYLVANIA,

FORMERLY HEAD GARDENER TO CALEB COPE, ESQ., AT SPRINGBROOK, AND AT THE BARTRAM BOTANIC GARDENS, NEAR PHILADELPHIA. GRADUATE OF THE ROYAL BOTANIC GARDENS, KEW (LONDON), ENGLAND. MEMBER OF THE ACADEMY OF NATURAL SCIENCES.
AUTHOR OF "AMERICAN HAND-BOOK OF ORNAMENTAL TREES,"
"FLOWERS AND FERNS OF THE U. S.," ETC.

VOLUME XXIX, 1887.

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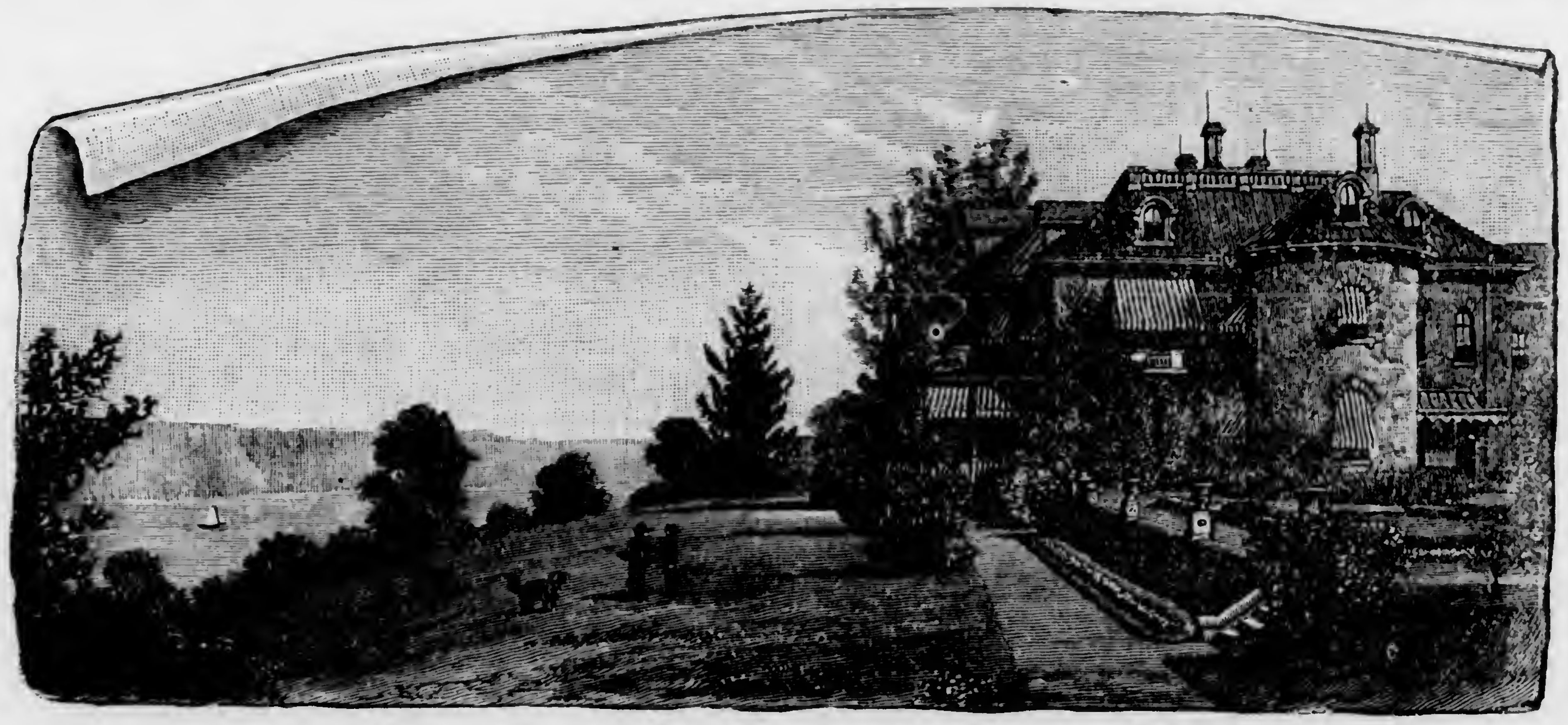
Edited by THOMAS MEEHAN.

VOLUME XXIX. JANUARY, 1887. NUMBER 337.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.



Hudson River View from Stonehurst. (See page 3.)

Our column of Seasonable Hints differs from other portions of the magazine in this, that it deals only with that which is known and admitted as good practice,—while the whole of the other departments is devoted to progress. We endeavor to find out there that which is new. There we seek to prove all things and to hold fast to that which is good. There we desire to give to every reader something that will make him a more intelligent being, and the more intelligently to deal with that of which he already knows. Seasonable Hints is rather the friend at the elbow; nudging when we may perchance forget, and prompting from behind the scene, when we may falter in our path. Hence there must be always a certain amount of sameness at each monthly period, for the same rules that will give us good beans this year, or help us to brag on the size or beauty

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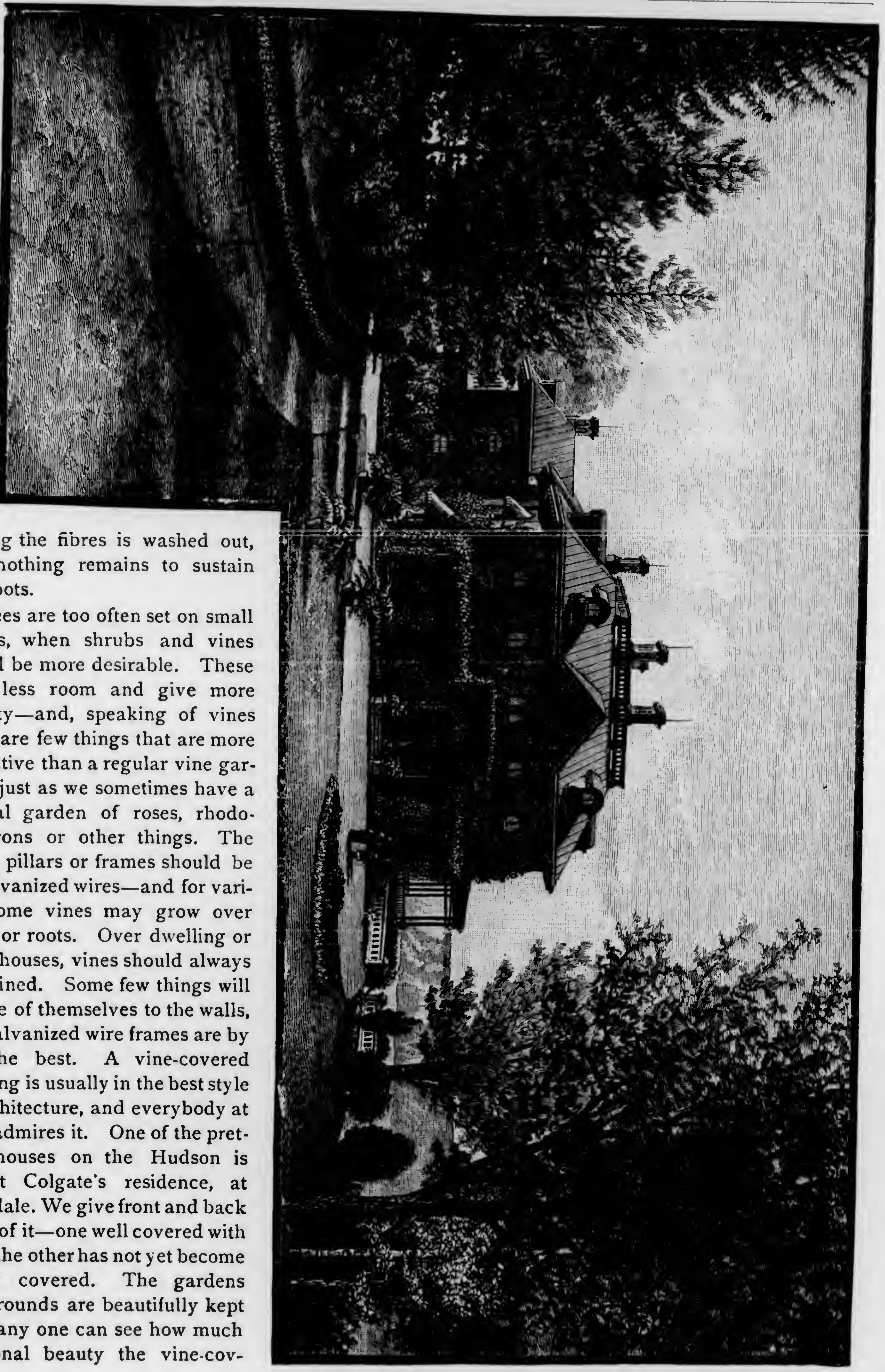
of our pansies, are generally the rules that helped us last. This comes of our desire to be a practical helper—for the practical man or the practical magazine is the mere teller of that which has been done. The reformer—the one who thinks things might be better—the "go-a-head" fellow—is all very well in his way; but the staid, sober, steady, "allright" leader, never fails to get warm admirers, and confident following. If then we should, during the next year, be found repeating, good reader, remember that though the coming summer will not be the summer you had last year, it is the same sun that warms it, and the same south wind that saves chill boreas from blighting the hearts of springtide's flowers. Our Seasonable Hints may not be wholly new, but you will no less welcome them, and we hope to your profit.

Seasonable! This is January. Our readers along the Gulf of Mexico, Lower California and the seaboard States of the southeast, are already counting their rose buds, and getting ready the sugar and cream for the early strawberries. Those in Labrador or Alaska—though we are not sure the Governor of this newly organized territory has yet sent in his subscription, and the Indians have as yet not learnt the "Boston" language, as they term the English tongue—have hardly ventured out of their ice-built cabins. Seasonable hints are usually confined to local papers not heard of beyond the shout of one hallooing from the top of the village spire. To a constituency so world-wide as ours, hints that are seasonable form the most difficult of our undertakings, yet we have a hope that by getting somewhat in advance of the season for our colder localities, we can in general assist nearly all. It is, for instance, nearly planting time in some parts where these words will reach, —it is only waiting a little till it is planting time elsewhere. Now what is it people are apt to forget at planting time? We have perhaps a new house, and a bare piece of ground. If we could only get trees of some size to make a show at once? Well why not? Because large trees do not grow, and small ones are best anyhow. This is the general answer. But large trees do just as well as small ones if they are in good condition and are properly moved, and it is not a costly operation either,—though it was costly in the days when it was thought necessary to carry a huge ball of earth away with the tree. But first as to condition. Trees do not begin to bear seeds freely till they are ten, fifteen or more years old. Now any good thrifty tree, full of vital force, can be moved with as much safety as a two or three years old tree. A tree half exhausted by seed bearing, a hide-bound tree, or a tree half sick or half starved, cannot be moved without much risk. Then as to digging, it is Satan tempts us when we think of the ball of earth. Resist him and all his works. If the tree be say three feet round and twenty feet high, commence six feet from the trunk and dig a circle two feet wide, and full two feet deep. When this is done half the cost of the job is done. Then with a digging fork and spade together dig out under the tree, so that it seems to stand on an inverted pyramid. Then with the fork clean out the earth from the upper rim of the circle,—the earth falls to the bottom of the trench, and leaves the roots exposed. Take the earth out of the hole so as to have a clear field to work in, and get more earth out from under; and then loosen the rim as before. It will not be long before the tree has almost nothing to stand on, and will almost fall over of its own accord. Such a tree will have a mass of roots twelve to fifteen feet across, and when properly replanted, scarcely needs any stakes. To be well planted simply means to have every cavity about the roots well filled and packed firm, so that in case of a heavy rain there is no sinking to be done, but will be regularly distributed over the whole loosened spot.

Now, as to the cost of this work. Philadelphia nurserymen will sell, dig and deliver such trees for from $20 to $25, and, though no one in a respectable business warrants a tree to live, any more than the best lawyers will warrant you to gain a case, or a physician warrant to cure a sick man, yet, if they did not generally live there would not be the trade there is in them. But few have the money for large trees,—and often they are not to be had for any money,—our directions are, of course, only for those who have. Small trees must ever be the trees for the masses. But the same rules hold good. A tree, to live, should have a hardy, vigorous constitution. There is much more chance for a vigorous healthy tree, poorly dug, and with poor roots, than for a badly grown tree with all the roots it ever had. Sometimes the fact that a tree has a splendid mass of fibrous roots is against success in planting. It is almost impossible, without care, to get the earth in between them. Nothing is more surprising to many people to have such trees die,—but deaths among them are extremely common, particularly among dense fibrous rooted Hemlock and Norway spruces. And they are especially liable to die if they are heavily watered after planting, as the little earth remaining in among the fibres is washed out, and nothing remains to sustain the roots.



Stonehurst: The Residence of Robert Colgate, Riverdale-on-Hudson, N. Y.

Trees are too often set on small places, when shrubs and vines would be more desirable. These take less room and give more variety—and, speaking of vines there are few things that are more attractive than a regular vine garden, just as we sometimes have a special garden of roses, rhododendrons or other things. The posts, pillars or frames should be of galvanized wires—and for variety, some vines may grow over rocks or roots. Over dwelling or other houses, vines should always be trained. Some few things will adhere of themselves to the walls, but galvanized wire frames are by far the best. A vine-covered building is usually in the best style of architecture, and everybody at once admires it. One of the prettiest houses on the Hudson is Robert Colgate's residence, at Riverdale. We give front and back views of it—one well covered with vines, the other has not yet become wholly covered. The gardens and grounds are beautifully kept—but any one can see how much additional beauty the vine-covered house gives to the scene. It is a principle in landscape gardening, that art and nature should gradually combine. The sudden meeting of a very rural and an artificial feature is always deprecated. What can gradually grade the two great domains more beautifully than by running vines over the buildings?

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COMMUNICATIONS.

ARISTOLOCHIA ELEGANS.

BY M. H. LESTER.

In the winter of 1882, my then employer, Prof. Richardson, handed me a paper of seed he had just received from a lady friend in Brazil, without name, but represented as the prettiest flower in that country. I took an interest in it, and after the plants came up, I potted them off in thumbs, and put them on the bench in the propagating house, where they stubbornly refused to grow any more. In making room, some time after, I put them outside in a cold frame, where they almost immediately commenced to move and push roots through the pots. I then placed three small plants in a 10-in. pot, and stuck a piece of Orange branch in the centre for them to climb on, as they appeared to incline that way. I gave them the protection of a lath-house all summer, where they grew away and covered the branch. In September, I moved them to the palm-house, and they bloomed in October of the same year—the first time, I think, in the United States—and turned out to be Aristolochia elegans. We had so many other good things, I did not think it worth a notice at the time.

The plants seed very freely, and through the courtesy of my late employer, Dr. T. G. Richardson, New Orleans, La., I am enabled to send you a few. The plant is very interesting. While in seed, the pod bursts open and remains suspended half full of seed, the seed hanging by five or six thread-like appendages, which combine into one higher up, and give the plant the appearance of being covered all over with little hanging-baskets.

Seed was distributed by me at that time in Belgium, France, England and other places, and I understand is now advertised as a novelty by a London firm. It is also the subject of a notice by your correspondent "G. W. O.," in the MONTHLY for November. The plant is very well worth cultivation.
Georgetown, D. C.

[Dr. Richardson, and a lady near Philadelphia, have also kindly sent seeds, the latter observing that it blooms beautifully during the summer in the open air near that city.—Ed. G. M.]

HER MAJESTY ROSE.

BY MANSFIELD MILTON.

With what a sound of trumpets was this rose ushered upon the confiding florists. Its immense flowers, its vigorous growth and all its other good qualities were lauded to the very highest. We poor mortals thought a new creation far superior to anything ever heard of before had appeared among roses; but, alas, where is it?—with most of florists, crowded in some corner, covered with mildew, looking ashamed of itself.

By-the-by, do those who shouted its praises the most, grow it without mildew? If they do, would they give one loud shout as to how they do it, and relieve poor confiding florists like myself, who have a number of plants we are ashamed of seeing ourselves, much less letting others see.
Youngstown, O.

LILIES.

BY REV. E. P. POWELL.

I cannot understand how a man like C. M. Hovey can say, "A layer of 6 inches of well-rotted cow manure, placed 5 or 6 inches below the bulbs, is the best fertilizer I have tried for lilies." The fact is, that most of the lilies abhor manure, and will die at the touch of it—that is, they rot. The Speciosums, especially, detest it. The lilies need one of two things—either simply good garden soil, or a mixture of rich soil with sand and swamp earth. Our native lilies all prefer moist swamp soil, but they do superbly well in any good flower lawn when manure is kept away from them. Candidum requires ordinary soil, and prefers loose clay that is well worked; and no manure. Auratum will endure careful stimulating. My rule is, feed up your roses, but let your lilies diet on nature's provisions. Of course I do not mean, neglect them.
Clinton, N. Y.

◆

EDITORIAL NOTES.

HONEYSUCKLE TRELLISES.—Honeysuckles are usually grown on trellises,—but some very pretty effects in gardening can be obtained by training some of the more bushy kind, like Hall's Japan or the Evergreen, on straight poles. They must, of course, be strong and durable, or they will rot before the vines produce the desired effect.

MINA LOBATA.—Any one familiar with the common "Morning Glory" of our gardens, would hardly suppose that they had a close relative in the plant here described,—but Dr. Masters says of it that it "is a Mexican annual climbing plant, figured in the *Botanical Register*, 1842, t. 24, but lost sight of since. By modern botanists it is included under Ipomœa, but the form of the flower is so very different from most of the Ipomœas, that we think it more convenient to preserve the garden name. Messrs. Haage & Schmidt of Erfurt have the credit of re-introducing it. These gentlemen speak of the plant as really magnificent, and express surprise that so remarkable a climber should have been suffered to go out of cultivation."

Mina lobata: Part of the plant from a photograph after nature, much reduced.

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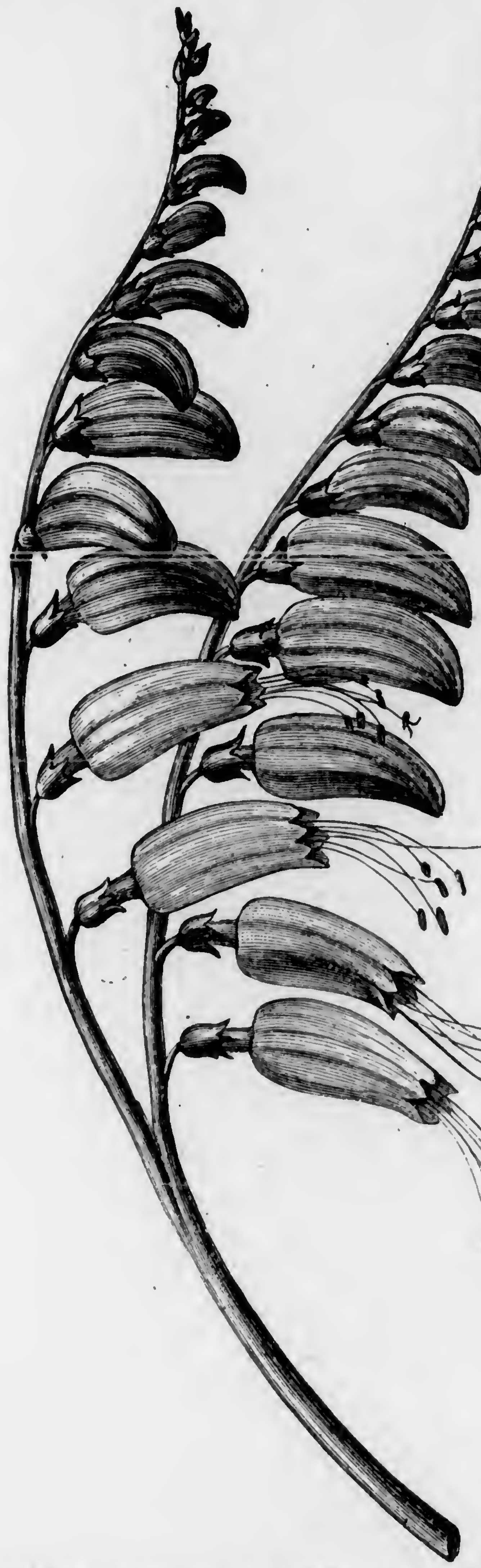
Mina lobata: Part of the plant from a photograph after nature, much reduced.

INTENTIONAL SECOND EXPOSURE

They further say of it:

"This really magnificent and most attractive climbing plant has been admired by all visitors of our establishment during the whole summer. One would scarcely believe that such a lovely plant after once being introduced to European Gardens could be lost again, but such is the case with this plant although it seeds as freely as the Cypress Vine (Ipomœa Quamoclit). It was introduced about 50 years ago, as Loudon in his Encyclopædia of plants mentions the year 1841 as the time of its first introduction to Europe from Mexico. The plant must have been flowering in the gardens of the Royal Horticultural Society of London in 1842, an illustration having been published in the Botanical Register that same year. We suppose the plants did not bring any seeds to maturity and this may be the reason why this remarkable plant has disappeared again, as it happened with a good many other fine ornamental plants cultivated in gardens about that time.



Mina lobata: portion of flower-stalk. Flowers orange to red, nat. size.

"The genus Mina (named after Don Francisco Xavier Mina, a Mexican minister) is closely allied to Ipomœa and resembles in growth and its three-lobed foliage the several species of this family, but totally different are the flowers as concerns their form and their lovely colors. The flowers appear on fork-like racemes bearing themselves upright or almost erect out of the dense and luxuriant foliage and present thus with their colors an extraordinarily striking aspect; the flowers are as buds at first bright red but change through orange yellow to yellowish white when in full bloom. Another interesting and most singular feature of this plant is, that it retains the racemes developed at first during the whole flowering season; the buds growing successively at the tops of the racemes, while the flowers after blooming for a considerable time fade, bearing thus continually clusters of flowers from the bottom up to the highest vine of the plant. The oldest racemes attained a length of 15 to 18 inches until the end of September and had produced 30 to 40 individual flowers on each fork-like raceme, of which were 6 to 10 in full bloom or in colored buds at one time. The tube-like flowers are borne unilateral and almost horizontal on the upright racemes and measure when fully developed three quarters of an inch in length while the uppermost colored bud is only one eighth of an inch long. This plant proved to be a very rapid growing climber under our cultivation, the seeds were sown in March and the seedlings cultivated in pots until the middle of May, when they were planted out in the open ground and at the beginning of August had formed pyramids of over 18 feet in height well furnished with green luxuriant foliage and profusely covered with flowers, as will be seen by the annexed illustration which shows a part of one pyramid reduced from a photograph. It thrives well on sunny situations and is well suited for covering arbors, trellises, etc., on account of its rapid growth and great dimensions."

In a colored plate before us, issued by Haage & Schmidt, one is represented as growing over six stakes tied at the top cone, or tent-shaped, and it must be a truly beautiful object. As these plants thrive so well in our country it will be a welcome guest to American flower gardens. Seeds no doubt can be had of most of the leading seedsmen the coming spring.

TUBEROUS-ROOTED BEGONIAS.—Mr. William F. Dreer finds that if these are planted where water can drain rapidly away,—and yet get plenty of water, the plants thrive wonderfully, and are among the most beautiful of summer blossoming plants.

CHRYSANTHEMUMS IN MAY.—A Mr. Easton, of Sunbury, in England, has succeeded in getting Chrysanthemums to bloom in May, instead of the usual November time. Much of the popularity of the Chrysanthemum comes from its season of blooming, and we fancy the May blossoming will be no more welcome than snow in harvest.

W. F. BENNETT ROSE.—French rose-growers do not seem to be willing to concede that this rose will, in any way, supersede General Jacqueminot.

LARGE PANSIES.—Mr. W. Atlee Burpee, of Philadelphia, making a specialty of Pansies, claims they can be raised to measure 3½ inches across.

DAFFODIL SEED.—In olden times, when daffodils were daffodils and nothing more, they were not known to seed. Now that the flower has been raised to something of dignity, the camel's hair brush has been brought into requisition, and pollen applied to the stigmas. Since then daffodil seed has actually become an article of trade.

GRAFTING EUONYMUS.—The common Euonymus is often used as a stock on which to graft the various evergreen Japanese kinds, and, strange as it may appear, the deciduous character of the stock does not seem to affect the scion in the least—at all events so far as my experience extends, and I have some hundreds treated in this way as well as on their own roots. The grafted plants certainly grow the faster, and suckers or shoots from the base of the plant do not seem likely to be any trouble. One thing with regard to grafted plants is that by employing strong vigorous young seedlings as stocks, standards can be formed if desired, for the Euonymus is by no means difficult to graft. They had better be kept under glass till the union is complete. In this way I have seen the creeping E. radicans in quite a new character, viz., grafted on a branching head of the Spindle tree, about 5 feet high. As several grafts were put on closely together, a dense head of foliage was formed, whence the long flexible shoots hung down for some distance.—*Alpha, in Garden.*

We re-produce this as affording a useful hint to our propagators, as so much useful material in ornamental gardening may be afforded by these plants. The only drawback in America to the usefulness of the Euonymus is the fondness of a species of scale insect for them.

THE DISEASE OF THE DAY.—According to *Journal des Roses*, sending out new seedlings is the "maladie du jour."

GOOD SUMMER CLIMBING ANNUALS.—Everybody knows how pretty common Nasturiums are,—the Maurandia Barclayana is also well known. A very pretty plant not as generally cultivated is the Lophospermum scandens. It is allied to the Maurandia and is a good companion plant.

NEW OR RARE PLANTS.

ROSE SEEDLINGS IN CALIFORNIA.—California has astonished the world by succeeding with almost every variety of fruit that will do well in the rest of the world. Now they are working up flowers, and attending somewhat to the improvement of the rose. Mr. Gustave Eisen, of Fresno, raised last year in the neighborhood of 1,000 seedlings. It is believed that something good will come from these efforts.

A NEW TYPE OF DAHLIA.—The "new German" is the type of a new class of Dahlia that promises to be popular. It is remarkable, says the *Revue Horticole*, as having the appearance of massy fringe. The flowers are very double, and are quite as pretty as the original type.

A GOOD VIOLET.—The *Gardening World* says: "Archie Grant is a grand purplish blue Viola, and one of the finest we have. Even for the production of flowers for gathering both that and Countess of Kintore are invaluable, as the bloom-stems are so long and the bloom so distinct and handsome."

AMPELOPSIS JAPONICA.—Some of the English nurserymen are selling our common poison vine, Rhus radicans, under this name, and are being badly punished for their deceit or ignorance. The newspapers report numbers being badly poisoned by handling or cutting it. They will be as sorry for introducing this pest after awhile, as Americans are for importing their sparrows.

PRIMULA SIEBOLDII.—This Japan species, very distinct from other species of Primrose, seems growing in favor as a pot flower in Europe,—and may rival the good old Chinese primrose in popular affection before long.

ACER COLCHICUM RUBRUM.—This Japan maple—more properly Acer laetum,—when young makes two growths a year, and the second growth is of a beautiful winy red. When the tree gets older, it rarely makes these red leaves. There has now been produced in France a tricolored form. As given in the chromo-lithographs, it is very beautiful, the leaves being mottled with green, red and white. If this color comes on the regular foliage, and not merely on second growths, it will be a highly-prized addition to our ornamental maples.

NEW DOUBLE POMEGRANATE.—A double red variety, but with the petals margined with white, has been produced in France. There is also a double white one there.

SCRAPS AND QUERIES.

Of Leaves as Manure.—A Philadelphia lady writes: "Please give me your opinion of the usefulness or uselessness of dry leaves. I have observed people very diligent in gathering them, and I have wished my grandchildren and servant to do the same, believing that when dry they would be good for horses' beds, and afterward useful on the ground. The man who does our work, says bedding horses on leaves makes them hard to clean, and he had been told they would not decay so as to be useful to the ground, for seven years. Please give me your opinion."

[Leaves are not good bedding for horses when extra cleanliness is desirable, as the somewhat spongy character of the mass does not allow the moisture to escape as straw does, while small particles of the broken leaves are difficult to get out. As a bedding for cows there is not so much objection. The leaves would probably be sufficiently decayed for use in less than seven years, especially if mixed with stable manure in a high state of fermentation,—but it does take some time in an ordinary way for leaves to decay, and, unless they are thoroughly decayed they are apt to communicate root fungus to vegetation, which is one of the most insidious causes of injury to crops that the gardener has to deal with.—Ed. G. M.]

Preserving an Injured Tree.—"Miss E. J. D.," Nicholasville, Ky., says: "About six years ago a magnificent oak tree was struck by lightning and a groove some three or four inches deep was burnt in the tree about twenty feet from the ground down. Will you please inform me through the columns of the Gardeners' Monthly how I may arrest the decay that has already begun?"

[Water is the great agent of decay in these cases. Cut or scrape out all decayed material down to hard or solid wood, so far as it can be reached, even though a little good wood has to be cut away to get at it, and cut so that no water can be retained anywhere; then paint every part of the hard surface that can be reached. In this manner decay will be arrested, until in time by the regular accretions of new growth, the edges of the living parts will meet and unite, and only the mark formed where the new growths meet, as in a grafted part of a tree, will be the only indication that it ever was injured.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

There is much hesitation as to when plants should be potted or repotted. The rule among gardeners is to repot just before the plant begins to grow, or while it is growing freely. It should never be repotted when at rest; or if it is necessary to repot then, the soil should be kept rather dry till some signs of growth are apparent. At the first potting, when the plant is taken from the ground or in any event, the rule is to get into the smallest size pot that the roots can be pressed into, and as soon as growth commences, to repot into one just a size larger. Where the very best success in plant culture is desired with strong growing plants they get three or sometimes four shifts a year.

If a plant has a large quantity of earth in proportion to roots, the continual watering is apt to make the soil sour, as gardeners term it, unless the drainage is very perfect indeed. In such cases it is said that the plant suffers from over-potting. When the plant is to be repotted, the soil can scarcely be too dry, and it is rammed in between the old ball and new pot as firmly as possible. It is very important to health that the drainage should be good. The hole at the bottom of the pot is to let out the water, and this should be covered with pieces of broken pot or gravel, broken brick, or something that will assist the water to escape,—and on this a piece of moss or something that will prevent the earth from clogging up the spaces between the material. All this trouble is only taken where the very best results from plant growing are desirable. Potting and watering are among the most critical conditions of success in plant growing.

Window plants suffer much at this season from the high and dry temperature at which it is necessary for human comfort to keep our dwellings. Air can seldom be admitted from the lowness of the external temperature. Saucers of water under the plants do much to remedy the aridity from which room plants suffer. In such cases, however, so much water must not be given to plants as to those without saucers. The water is drawn up into the soil by attraction; and though the surface will appear dry, they will be wet enough just beneath.

The more freely a plant is growing, the more water will it require; and the more it grows, the more sun and light will it need. In all cases, those which seem to grow the fastest should be placed nearest the light. The best aspect for room plants is the south-east. They seem like animals in their affection for the morning sun. The first morning ray is worth a dozen in the evening. Should any of our fair readers find her plants, by some unlucky calculation, frozen in the morning, do not remove them at once to a warm place, but dip them in cold water, and set them in a dark spot, where they will barely escape freezing. Sunlight will only help the frost's destructive powers.

The temperature of the greenhouse at this season should be maintained at about 50°, allowing it to rise 10° or 15° under the full sun, and sinking 10° or so in the night. Though many of our practical brethren differ from us—men, for some of whose opinions we entertain the highest respect—we do not recommend a very great difference between night and day temperature; we think 10° ample allowance. It is following nature, no doubt, but we would rather strive to beat nature. She can not make the specimens we do, nor flower them so beautifully or profusely; and in many other respects we think the practical gardener can much improve on her red tape notions and old-fashioned courses.

COMMUNICATIONS.

CLERODENDRON BALFOURI.

BY STEWART RITCHIE.

This fine hot-house climber deserves more attention than it generally gets. It should have a place in every collection of plants, however small. To flower it perfectly, it requires a good season of rest, as it belongs to the deciduous section of the Clerodendron family. As a winter flowering subject, there are few things that I am acquainted with to equal it. I have a plant that at the present time is perfectly covered with bloom, and will last in good condition till after the holidays, which is no small item at this dull season of the year, when flowers are always scarce. Taking into consideration the ease with which it can be flowered at any time of the year, it is a great pity it is not more generally grown. *Waterville, New York.*

NOTES ON WINTER DECORATIVE PLANTS.

BY CULTIVATOR.

In private establishments, where space is often limited, it requires no little skill and forethought to keep up the needed supply of flowering plants, for house and conservatory decoration, during the dull, sunless months of winter, together with the never-ceasing demand for cut flowers. The object of these notes is, to touch, in a general way, upon a few subjects, not at all rare and expensive, but indispensable to the private gardener, who is required to grow that which is good to look at, as well as that which is good to cut at.

The number of plants suited for winter work are legion. The season may be said to be inaugurated with the Chrysanthemums, among which are forms and colors enough to please the most fastidious. Young plants of these are always preferable, planted out in May, regularly pinched until July, lifted and potted by middle of September, getting them well established before bringing indoors. This is the most economical way of growing them, for general decorative purposes; but if very fine flowers are required, pot culture is preferable, and when resorted to, unremitting attention must be paid to watering, and potting on as required, otherwise it had better not be attempted, for it is sure to end in failure. Good associates with these are the Double Geraniums, (or more properly Pelargoniums) among which are so many beautiful colors. Young plants grown on in pots plunged out of doors, with the flowers kept off until the middle of September will be found to give good results. Then there are the Stevias and Eupatoriums; these are best kept in pots throughout the summer, as when planted out they make too rank a growth. The Heliotrope for early flowering, is amenable to the same treatment, also cuttings put in in September and grown on, will make beautiful little plants by the holidays, which will be found useful for many purposes. If, after these show signs of being worn out, they are well cut back, and when just breaking, given a liberal shift, they will again flower by March. Salvia splendens, treated in the same way makes a beautiful plant, of light graceful habit, for conservatory arrangement. If a batch of Tuberoses is potted up in July, and brought on out of doors, they will be objects of great beauty for the conservatory during October and November, as well as useful to cut at. The Carnations, Bouvardias and Roses will form a good succession to the Chrysanthemums. Libonia Floribunda and Penrhosiensis are pretty subjects, coming in about the New Year. Nothing is prettier for the front row in a conservatory than an alternate plant of Libonia Penrhosiensis and Roman Hyacinth. Another plant of great merit for winter work, is Linum trigynum, supplying a color quite rare in flowering plants at that season of the year. This is a hungry plant, and must be well fed. It is very subject to red spider, and during the growing season the syringe must be vigorously applied. Any one who loves Abutilons, should plant them out in summer, and take cuttings of the flowers or leading shoots in September. When rooted, grow on into 4-inch pots, by that time they will begin to flower; plants less than 1 foot high, clothed with large healthy foliage to the rim of the pot. I cannot too highly recommend this method of growing Abutilons. We had a number grown in this way last winter that were the surprise and admiration of all who saw them, the flowers far surpassing in size; those usually borne out of doors a temperature of 50° will keep them in bloom all winter. The English Wallflowers, will be always admired for their sweet odor. We sow these in a shady corner last of May, and pot up in October. We find them of immense value, both for the conservatory and for cutting. The Dutch bulbs, such as Hyacinths, Tulips and Narcissus should be potted at intervals to insure succession. Other pretty bulbs requiring the same treatment are Tritelea uniflora and Allium Neapolitanum. Then there is the favorite Freesia refracta alba with its sweet odor, and the much talked of Amaryllis Treatæ will be admired. Astilbe Japonica, with its feathery white flowers, will add grace and beauty to any conservatory arrangement, and is so amenable to forcing that a long succession can be obtained. We find imported clumps give the best results; indeed in this latitude we have never been able to bring them through the summer to our satisfaction. Deutzia gracilis should be in every collection; fancy a bush draped with Lily of the Valley. For very early forcing it is best grown throughout the summer in pots, as then it ripens up its wood earlier, a point of great importance in the forcing of all such plants.

The Chinese Primulas, Calceolarias and Cinerarias, are indispensable for all conservatory work. Of the Primulas, we usually make three sowings, March, April and May. They require careful nursing, through the hot summer months, but well repay the labor. The Cinerarias and Calceolarias are best not sown until September. If they can be given a temperature of from 45° to 50° through the winter months they will make rapid progress and come into flower in February and March. Few things give a conservatory a gayer appearance than a well-grown batch of Calceolarias. Cyclamen Persicum and its varieties combine beauty of foliage and flower, and a well-grown Cyclamen will be admired in the choicest arrangement, whether it be in the conservatory or the drawing-room. The best time to sow them is September, in well-drained pots or pans, filled to within ½ inch of the top with some light rich soil; cover the seeds about ⅛ inch deep, place a pane of glass over them and keep dark. They take a considerable time to germinate, and the cultivator must exercise great care in watering, so as not to get the soil sour. By the middle of November they should be potted into very small pots and kept well up to the glass in a temperature of 55° throughout the winter. As the season advances, they must be potted on as required. The best summer quarters for them—the first season—is a cool, shady greenhouse. A look-out should be kept for thrips, to which they are very subject. The next season they can be planted out and lifted before frost.

Among more tender things that will stand removal to the conservatory for a time without injury may be mentioned the Poinsettias, which help to make so gay the holiday season, with their bracts of dazzling scarlet. Young plants of these usually give the finest heads. They can be propagated from cuttings of either the old or young wood. They do well, plunged out of doors during the summer, but should be housed early, as they are very tender, and any lengthened exposure to cold causes them to lose their lower leaves. They will open their bracts to perfection in a temperature of 65° and delight in copious supplies of liquid manure. When fully expanded they can be removed to the conservatory, where they will be in perfection for a long time. Eucharis Amazonica is another gem among flowering plants that can be had in perfection almost any time at the will of the cultivator. It flowers best when a little pot-bound. For winter flowering it should be encouraged to finish up its growth by September, when a rest of from six or eight weeks should be given by removing to a cooler house or a shady place out of doors, only giving sufficient water to keep the foliage from suffering. After the needed rest, if subjected to a temperature of from 65° to 70°, it will almost be certain to flower, provided the plant is strong enough. A great point in the successful flowering of this plant is to regulate its seasons of growth and rest. It makes its growth immediately after flowering, and every leaf should be fully developed before putting to rest.

Last, but not least, let me say one word in commendation of those beautiful gems of the floral world, the Orchids. I will not enter into any details, as I have already taken up too much of your valuable space; suffice it to say that many of them are as well adapted for decorative purposes as any of those which I have enumerated, and can be grown as cheaply and with far less labor. It is not expense and labor, but a thorough knowledge of their requirements, that is the key to their successful cultivation. *South Virginia.*

GESNERAS.

BY MANSFIELD MILTON.

This beautiful class of plants is not nearly so largely cultivated as their merits deserve. Not only do they have beautiful flowers, but a good many of them have very handsome foliage, making them well worthy of culture for this alone.

This class of plants is easily cultivated, and insects do not bother them very much. As they make their growth during summer, there is generally plenty of room in the greenhouse to allow them to fully develop their beauty; for, like everything else, if neglected and crowded too much they do not make very attractive specimens.

About April, take the roots out of the pots in which they have been resting during winter; repot in other pots, using good fibrous peat and well-rotted cow manure, say four parts of peat to one of manure; add to this plenty of sand, for as water during this season of growth has to be abundantly supplied, it is necessary that it pass freely through the soil. Perfect drainage is also needed, even when grown in small pots.

As the pots get full of roots, weak liquid manure should be applied to maintain their vigor until their flowers are produced. By allowing them to get into a starving condition, the flowers produced are generally weak and poorly colored. After the flowering is past, care should be taken not to dry the roots too soon, as upon the thorough maturing of the tubers depends the following season's growth and blossoms.

While they require an abundance of water at the roots and a moist atmosphere, they should at no time be syringed overhead. Not only is this applicable to this class of plants, but Gloxineas, Tydeas and Plectropomas cannot endure water on their foliage, while all, during the time they are making their growth, require abundance of it at the roots.

The finest varieties having beautiful foliage are G. zebrina, with its velvety leaves beautifully marbled, the flowers an orange scarlet. G. Exoniensis.—This beautiful variety has dark, velvety leaves of fine habit, flowers scarlet, a yellow throat. G. Cinnabarina.—The flowers of this variety are a bright red with light throat. The foliage is remarkably handsome; the bright-colored hairs on the velvety green give it an attractive appearance.

Youngstown, Ohio.

EDITORIAL NOTES.

Good Basket Plants.—For hanging-baskets in rooms where there is some shade, there are few things better than the running varieties of Tradescantias, the various sorts of Begonias, and especially the different kinds of Ivy-leaf Geranium. The latter indeed proves to be the gem of basket plants.

Bulb Vase.—A very pretty style is described by the *Revue Horticole.* It is globular with a small opening at the apex in which a Hyacinth is planted. The globular portion is full of holes, from which Crocusses emerge. This combination is in harmony with the configuration of the vase and the effect is very pleasing to an artistic taste.

Dandelion as a Window Plant.—Since our notice of the successful culture of the Dandelion as a window plant by a Philadelphia lady, the gardening papers of the Old World are filled with paragraphs recommending it. It is to be observed, however, that it requires to be in the full sunlight if we would have the full benefit of its golden blossoms. They do not expand fully where there is no sun.

Type of a First-class Hyacinth.—Judges often hesitate as to how to decide on the contesting merits of Hyacinths. One rule is, that the leaves should be broad and healthy, but not too long, and not project much above where the flowers begin on the spike. The flower head with its sustaining stalk should be nearly double the length of the leaves. The flower head itself should form a regular cylinder, though slightly tapering at the top.

Chrysanthemums and the Cut Flower Trade.—November has been a serious month with cut flower growers in large cities. The rage for chrysanthemums threw other flowers out of a great measure of popularity, and spoiled the sales.

INSECTICIDES.—L. Henry, in the Belgian *Bulletin de Floriculture*, contends that after trying the various special manufactured remedies, he is convinced that tobacco juice in its different forms is still the best insecticide.

THANATOPHORE.—This is the French name of a machine for the vaporization of nicotine to be used in insect destruction.

LILACS IN POTS.—Few plants are better suited for forcing when properly prepared, than the above, and certainly as a rule, when well-grown are thoroughly appreciated, and yet how seldom do we meet with them even fairly cared for. Procure sufficient stock of the common white and purple varieties from a nursery, and pot them into 12-inch pots, using a good strong loam and potting quite firm; if lifted, as they probably will be from the open ground, place them where they will be shaded from the direct rays of the sun, and where they may be frequently syringed until they recover from the lifting, which will be seen by their making a start into growth.

After removing them from the house place them in any shady corner for a few days, until the foliage becomes hardened and able to stand the weather; now select some quite open situation, having a west aspect, if possible, and plunge the pots 2 inches under the soil in rows sufficiently wide to allow the sun and air to have free access, and also to allow of the plants being watered when necessary, also to keep free from weeds; they will need no further attention, and can be lifted as required. Of course, it is necessary to encourage as free a growth as possible to ensure good heads of flower. After the plants have been forced they should be gradually hardened off preparatory to being again plunged out of doors, and it will be necessary to cut them back, roughly pruning them into shape only; and it will be hardly necessary for me to say that the same plants will not be ready for forcing the following season, but in alternate years, so that it is necessary to provide a double stock.—*Gardening World.*

SCRAPS AND QUERIES.

OIL AND SULPHUR FOR MILDEW.—"J. S.," Wilmington, Del., inquires: "On Colonel Dupont's place is a large greenhouse full of flowers, with a large rose bed at the warmest end. The greenhouse is heated by a flue near the fire. The flue is over two feet from the wall. Could I put the oil and sulphur on the wall to kill the mildew on the roses? No danger of the sulphur to burn at that distance? Would the mixture do any harm to the flowers? If not, what kind of oil is used? An answer through the GARDENERS' MONTHLY will be thankfully received."

[Linseed oil and sulphur, as a remedy for mildew, has only been used in our experience on hot-water pipes, and we cannot say what would be the result from painting the wall 2 feet from the flue. Without the actual experience it would be difficult to guess at the result, except that it could not possibly be injurious.

In regard to the use of this remedy on hot-water pipes it must also be borne in mind that there is a peculiar odor from the wash on pipes, which is objectionable to some. It is not disagreeable to the writer of this, nor perhaps to many others, but all persons are not constituted alike. In a gentleman's or lady's conservatory, where persons of varied tastes are expected to enjoy themselves among the odors of flowers, we should doubt the expediency of one unvariable odor from sulphur and oil, and should prefer the sulphur remedy alone without the oil.—Ed. G. M.]

A CURE FOR MILDEW.—Our excellent French correspondent, Mr. Jean Sisley, says that it has been found in that country that about 6 pounds of salt to 100 quarts of water has been found a complete cure for mildew and other low cryptogamic forms of plant life that bother the cultivator. This is likely to be a very valuable hint. Salt has always been known to be injurious to vegetation, in large quantity, but it has not been known that a smaller quantity will kill fungi, and yet not harm the higher forms of vegetation. It seems to us that even a lesser quantity than that named might be used first with the water.

FLOWERING OF THE HARRIS LILY.—A correspondent, "R. J. M.," Chestnut Hill, Pa., under date of November 27, 1886, writes: "I have a Bermuda Lily bulb, but don't know how to plant it for the best, as I would like to have it flower about Easter. What kind of soil is best to plant it in? Should I keep it in the dark or not?"

[It is now too late to give any instruction that will benefit the correspondent, so as to have it in bloom at Easter. There is not much to be said at any rate as regards potting, as the Lily requires nothing peculiar from other bulbs. It delights in a very rich soil, and to have the bulb set as low

down in the pot as practicable. Like all bulbs, it is best to keep it in the dark for a little while, because all roots push best in the dark. In forcing Lilies the increase of heat should be gradual, in order to have the best results. When potted place in a temperature of about 45° for a couple of weeks, then 55°, and finally 65° to hasten flowering.

BEAUTIFUL CHRYSANTHEMUMS.—A box of very fine Chrysanthemums reached us on the 15th of November last, from Mr. John F. Clark, of Maud, Bucks co., Pa. They were remarkable for vigorous flower stems, and healthy foliage, and some of the flowers were 5 inches across. If Mr. C. would join in competition at the exhibitions we think the fate of some successful exhibitors would hang in the balance.

GERANIUM, MRS. ANDREWS.—Mr. A. W. Morgan, of Danville, Ill., has raised a seedling which is described as singularly beautiful. The flowers are described by a committee of ladies fond of amateur gardening, as "forming an almost perfect ball of coral red." The ladies give it the name of Mrs. Andrews.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

First, look after the nutrition of the trees. Some people say that land which will raise good corn will grow good fruit trees, which is all right; but they should add that, like corn, they require regular and continuous manuring. There are some parts of the country where corn can be successively taken for half a lifetime without manure. On these soils we need not manure fruit trees, but in all others we must, to have good results. This is particularly essential where trees are grown in grass, as both the trees and the grass require food. Where trees are grown in grass, we prefer top-dressing in June or July; but if it has not been done then do it now. Where trees are kept under clean surface-culture, the manure is of course ploughed or harrowed in with the crop in the spring of the year. To know whether trees require manure or not, ask the leaves. If in July they are of a dark rich green, nothing need be done to them; but if they have a yellow cast, hunger is what is the matter. This, of course, is supposing they are not infested by borers, in which case they will be yellowish in the richest soil.

In asparagus culture it is usual to put a thick coating of manure over the beds in the fall, and even yet if it has not been done it will pay to do so, provided the frost is not in the ground. For one of the objects of covering is to keep the frost out. Early asparagus is very desirable, and it is much earlier when the ground has not to be thawed out before the plant can grow. It loves rich food, so that the covering serves a double purpose. In small gardens, where every foot of ground is desirable, early radishes and lettuce can be sown on the asparagus bed.

It will be well to note what has been said about linseed oil in a previous volume. There is no doubt but it will destroy scale and improve the health of the trees; but in a few cases it has been destructive, evidently from the use of mineral oil, and not pure linseed. The purity of the article should be ascertained. Trees that have suffered badly from scale often get hide-bound—a slitting up and down with the pruning knife will set them on their feet again.

This is generally supposed to be the pruning season. Orchard trees generally get too much pruning. In young trees only thin out so as not to have the main leaders crossing or interfering with one another. Or when a few shoots grow much stronger than the rest, cut these away. Insist on all the branches in young trees growing only on a perfect equality. On older trees which have been in bearing a number of years, it will often benefit to cut away a large portion of the bearing limbs. By a long series of bearings, branches will often get bark-bound and stunted, preventing the free passage of the sap to the leaves. In such cases the sap seems to revenge itself by forcing out vigorous young shoots a long way down from the top of the tree. It is down to these vigorous young shoots that we would cut the bearing branches away. One must use his own judgment as to the advisability of this. If the tree bears as fine and luscious fruit as ever, of course no such severe work need be done, but if not, then now is the time.

This keeping out of borers, especially in the apple, is one of the most desirable things in fruit culture. Many prefer to wait till they see signs of sawdust at the ground, and then kill them by running a wire into the holes by the help of a jack knife. But it is best to keep them out altogether. A waxy grease, with some tar added, painted thickly about the base of the trunk, and just under the ground, is the best remedy. The insect keeps clear of this mixture, and goes to the trees of your neighbor to lay its eggs in preference to yours.

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COMMUNICATIONS.

THE JAPAN PEAR AS A STOCK.

BY MAX.

It must be confessed that the introduction of Japanese varieties has not added anything very desirable to the pear orchard, if adaptability to the table is sought. For culinary purposes several varieties have proven very serviceable and their vigor of growth, early and abundant bearing qualities will cause a demand for the kitchen garden or orchard.

The great benefit, however, to be derived from their culture will be in their use as a stock on which to work the finer varieties. Especially will this be the case in the middle and southern states. Even here in Virginia the summers are too hot and dry for the pear either on native or French stocks to succeed well; consequently owing to our long summers we frequently have the added disadvantage of a second or autumn growth.

Several years' experience has demonstrated that varieties budded on the Japanese stock have resisted the heat, held their foliage and continued to grow until October, while the same budded on French stocks ceased to grow in July, often starting again in September.

How far the increased vigor and vitality of the stock may tend to resist blight is a question; but there must be an improvement in that direction also. So far as known the blight has not attacked the Japan pear. The late Chas. Downing wrote two years since that a tree over thirty years old had never shown any signs of it, and it may reasonably be supposed that varieties worked upon it will derive resisting power from its hardiness and vigor.

To nurserymen they will prove an unalloyed blessing. They can be budded from May until October, and the work must be most unskillfully done if 98 per cent. do not grow. You may imagine, Mr. Editor, what a feeling of contentment that will give a nurseryman who has sometimes had difficulty in obtaining a stand of pear buds. But perhaps you never had that experience. Just think of it, Winter-Nelis, Beurre Gris d'Hiver and such like, making handsome trees in the nursery. Don't you say, welcome to our Japanese friends?

Richmond, Va.

[Though many suggestions have been made to use the Sand pear as a stock, there seems to be nothing on record that it has been tried. If any-one has had experience, we should be glad to know the result. As our correspondent suggests there is every probability that it would be in many respects advantageous. As a matter of fact the tree is not free from attacks of the fire blight. The Chinese quince might make a good intermediate stock. Its growth in this part of the world is more vigorous than the common quince.—Ed. G. M.]

NOTES ON FRUITS, AND SEASON IN WESTERN PENNSYLVANIA.

BY A. H.

Six inches of snow on the 9th of November suggests that the harvest is over, and that a summary of its products will not be out of season.

Somewhat drier than the average, the summer was, nevertheless, a very satisfactory one, and the autumn, at its close, with its gold and crimson maples, and its scarlet and purple-tinted oaks, made our hills and valleys a scene of beauty beyond pen-power of description.

Viewed from the stand-point of fruitage, the year has been a favorable one; thanks to railroads in all directions, our strawberry season of three weeks, years ago, is now protracted to nearly three times as long, and the novelties in this department, while contending with each other for popular favor, incur some rivalry also from early raspberries and blackberries, cultivated more now than formerly.

Grapes come to our market from the southern shore of Lake Erie, and our grocers keep them imported from California, but in this region they are not a success, largely for want of proper culture. If our farmers would cut out all old wood, leaving, to a large stalk, not more than four or five stout red canes of the season's growth, without any side branches whatever, and lay the vines down on the ground last of October, and cover them with leaves until about the first of May, they would find the wood plenty thick enough next season, and

success much more common than they now do. I find no difficulty in having an abundance of ripe Delaware grapes every season with the above treatment. It is better to grow a vine on a southern porch than one facing the east, and a tree some distance away may be useful, when there is a frost, to screen a vine from the morning sun. Farmers should know well what kind of vines to plant by having seen and tasted the fruit before confiding too much in agents offering high-priced novelties.

Under glass, the season of 1886 in this region was such that one could utilize the three conditions of success indicated by Downing, viz.: plenty of water, of heat and of air. Taking my vines up on the 16th of April, using no fire heat, keeping the ventilators open a great part of the time and watering liberally, all the black varieties colored and matured well, the Rose Chasselas never before was so uniformly colored red, a Frontinac de Saumur ripened its fruit fully by August 25, a Ioanec grape ripened August 27, and Buckland, Sweetwater and Golden Hamburg vines produced very large fruit, exceedingly beautiful in color and transparency, but showing, as they characteristically often do, a very few soft berries among the sound ones, without any apparent cause for so doing.

In a smaller vinery, with a southern exposure, treated in the same way as the foregoing, the Muscat Hamburg ripened and colored this year better than it usually does.

I have had less trouble with thrip this year than last season. I am not fully convinced that sprinkling a solution of Hellebore on grape vines will destroy thrip. I dipped some marked leaves in a strong solution of it, and watched the effect of it. For a time the insect kept away, as if the wash was disagreeable, but in a week or two afterwards I found on the underside of the leaves both eggs and newly-hatched insects. One does not care to use things poisonous, which may be distributed by syringing the vines, though the chance of doing any harm is trivial. A wire cup, with a long iron handle, in which is placed paper saturated with kerosene ignited, and passed rapidly and carefully over the foliage, avoiding the fruit, is still the most efficient way to destroy thrip that I have tried.

The apple crop in Crawford County has this year been a superabundant one, the fruit a drug in the market at twenty-five cents a bushel. The beauty and size magnificent, many of the large red varieties looking as glossy as if varnished.

Peaches in this region were this year again a failure, and fruit-growers get discouraged with so many severe winters. Pears were reasonably abundant, but mostly of small and hardy varieties. Better kinds and better culture would repay for outlay and labor. I had my own trees white-washed in the fall, and the soil they grow in enriched, and never wish for any better fruit than I got from them—Tyson, Sheldon, Seckel, Dana's, Hovey (some of the latter seven inches in circumference, many of them six and a half inches), and, perhaps best of all, Lawrence Pears. I had to thin out the fruit on the above, and several other varieties, Duchess d'Angouleme, Souvenir de Congress, etc. I found the fruit of the Lawrence, if gathered too early, will wilt, be somewhat tough and keep a long time; gathered a little later, it becomes melting, and keeps a fortnight or so. If left until it is a golden yellow on the tree, it becomes one of the juiciest, sweetest, melting pears known, but soon becomes soft and spoiled for use.

Meadville, Penna,, Nov. 10, 1886.

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EDITORIAL NOTES.

Raising Fruit Trees in England.—The *Gardening World* says that the enormous quantity of fruit trees raised in England has cheapened the price below the cost of production, and there are at present hundreds of thousands begging for customers.

Grafting Machines.—In one of our earlier numbers we gave an illustration of a machine for root grafting, invented by Mr. B. S. Ryder, who is also the inventor of the celebrated American Fruit Dryer. We do not know that any one has attempted to make a machine since that time till now, when one turns up, patented by Washington Maynard, of Illinois. It is very different from Ryder's, being arranged for collar grafting.

The Kieffer Pear in Missouri.—Mr. Samuel Miller, of Bluffton, Mo., finds the Kieffer this season better in eating qualities than Vicar or Easter Beurre, good as these have ever been with him.

A Native Gooseberry.—One of our Western species—Ribes oxycanthoides—is attracting attention for its fruit in England.

Grapes and Asparagus.—The culture of Asparagus in Argenteiul in France has been found more profitable than grape culture. In other civic departments they both go on together. The asparagus bringing in good returns before the grapes are profitable, and the manure necessary for asparagus being very acceptable to the grape.

PROFIT AND LOSS ON VEGETABLE RAISING IN FLORIDA.—Mr. D. W. Adams tells the *Florida Dispatch:*

"Last spring I grew a field of squashes, and made a shipment which sold for $1 per crate, which I consider a very fair price. It is as large a price as that vegetable can bear without placing it out of the reach of the great body of consumers. At a higher price the quantity consumed must be comparatively small. Now this is the way my account stood at the end of the shipment:

SQUASH ACCOUNT, DR.

To one crate	10
Picking, packing, nailing, marking and hauling to station	10
Freight to Savannah	55
Freight from Savannah to Boston	10
Wharfage	02
Drayage	03
Commission	10
Total	$1.00
Credit by crate squash sold	1.00
Net returns	0.00

The moral of which is, that it will be best to bring a Boston to Florida, and save the freight charges.

NEW PEA, SHARPE'S QUEEN.—This new English Pea is said to have a pod six inches long, and to bear 10—12 peas in a pod, each pea 2½ inches round. It is of the blue wrinkled Marrow class.

PITHY CELERY.—Recently we took occasion to express our belief that pithy celery was due rather to some defect in culture than in seed or variety, without denying that there might be a greater tendency in some variety to this defect than in others. We note that one of the most practical contributors to the *Journal of Horticulture* is of this opinion. He says:

"I may explain to beginners that 'pithy' celery is that which developes freely and promises well, but is altogether deceptive, as the fine-looking leafstalks, instead of being firm and solid, may be pressed together with the finger and thumb like a sponge. Celery of this kind is never relished on the table, and what is worse it will not keep, as it soon absorbs a great deal of moisture and decays quickly. It is impossible to remedy this now, but those who know little or nothing of it may have a better chance of noticing it at present than any other time. Many causes have been published from time to time as to the production of pithy celery, some thinking it was a question of too old seed, others too young seed; but in my opinion the seed has nothing to do with it, neither has the variety, as one is just as liable to become pithy as another. The soil in which the plants are grown is the sole cause of it so far as I can observe by experiment, and I would undertake to produce celery either pithy or not in any season."

DANDELION SALAD.—In early spring, as soon as the dandelion pushes its young leaves above the soil, women and children may be seen everywhere with knife and basket cutting them off just below the crown, for "salat," as they say. We are reminded of this by the following item in *Gardening Illustrated:*

"Dandelion is a wholesome vegetable used as salad or boiled like Spinach. For salad, use only the delicate young leaves, just after they appear among the grass. For cooking, either the young or full-grown leaves may be used. Clean and wash the leaves well, as there is usually fine sand or earth between them, and let them stand in cold water for two hours. Drain them, and throw them into boiling salted water, and boil for twenty minutes, if young, and half an hour if full grown. Put the leaves in a colander, and press them to extract all the water, and then chop them fine. Put in a stewpan 2 oz. of butter to 2 quarts of leaves, and set it over a brisk fire. As soon as the butter is melted, sprinkle in a tablespoonful of flour and some salt and pepper. Add the dandelion, stir until thoroughly heated, and then moisten with broth or milk, and serve."

SCRAPS AND QUERIES.

GRAFTING THE PERSIMMON.—"M. B.": The common persimmon is the usual stock on which the persimmon is worked. They readily unite, and seem to do well. It is often hardy as far north as Philadelphia, but it is often killed by light frosts, and as often stands severe ones without injury.

BLACK APHIS AND TOBACCO.—"Max" says: "Doubtless one quart of tobacco juice to two gallons of water will kill *a* black aphis if you get it to him, but to apply it is the question. Our experience is that simply syringing will not kill all or nearly all. We got rid of them from young peach buds by wheeling a force pump along the rows and by the force of the stream, knocking them off. This was followed by an immediate sprinkling of tobacco dust which prevented their return. This method is impracticable after the trees have attained one or two years' growth. Can't something more easy of application be found? Query: does the aphis attack the tree first and descend to the roots or vice versa, or does it attack both simultaneously?"

[The subject is one of great importance and he who shall succeed in solving the problem may make a fortune for himself, and get the thanks of our fruit growers besides. It has been found in every branch of horticulture that any operation that depends upon water for its appliance, is usually too costly. At one time liquid manure had many advocates both in horticulture and agriculture, but it was found the cost of hauling so much water outweighed the advantages. So also in the case of the potato beetle—all liquid forms of applying the Paris green proved too expensive. In the case of a few trees we can yet use liquid Paris green where the enemy is an eater—but insects that suck, like the aphis, these poisons are of no account. We have to use some narcotic like tobacco that will affect them through their breathing organs. We have faith that some cheap plan of doing this may yet be invented, though as "Max" suggests, in the liquid form it costs too much probably.—ED. G. M.]

APRICOT PLUM.—"B.," Rome, Georgia, says: "I notice a great deal in the agricultural papers lately about the apricot plum, and that it is especially profitable to planters in the south. What are its special merits? Does it escape the ravages of the curculio? Would you advise my planting largely of this variety?"

The apricot plum is a very old French plum, and no more free from the attacks of curculio than any other. It is a rather large yellow variety, coming in about the middle of the plum season. Possibly you have something known as Prunus Simoni mixed up with this, as we note, it is often called apricot plum. There would not be near as much objection to giving English names to plants if the names were given by some intelligent authority. The greatest objection to them comes from all sorts of names being given by any and everybody, until the historic confusion of tongues at the building of Babel, is a bagatelle compared therewith.

FORESTRY.

COMMUNICATIONS.

FORESTRY AND ITS ADVOCATES.

BY D. W. LOTHROP.

Nobody need be reminded that the subject of forestry is not new, but those who take an interest in it, rather than a pecuniary one, have greatly increased and changed its aspect. The main question now is, not how we can best clear an area of trees and stumps, to yield sustenance to man, or how much wood and lumber can be raised; but how we can best cover it with trees when denuded, for its real or supposed influence on climate, agriculture, health, etc.? Formerly, the farmer alone was actively interested; now the scholar, scientist, æsthetic, philanthropist and statesman, all seem to be vieing with each other to show their superior patronage; and the opinions between the different ones as to what should be done, and "how to do it," are nearly as varied as the families and species of the wooded domain. Can we wonder, then, that so little is done, and that so many complaints come from them against the slow farmer and the slower Government? And is not the more prudent, reflective man—who is not carried away by vagaries and phantoms, who believes that, as to the success of many public measures, "honest doubt is the beacon of the wise"—led to think very little can be done, or should be done, at least till the so-called savans and scientists (like the late Mr. G. P. Marsh and Elizur Wright) who write upon the subject, agree, or are consistent with themselves?

A great enemy to all mankind seems to be thought by the modern foresters, to be aridity of climate, caused principally by the denuding of our forest lands—which injures, it is maintained, the fertility of the soil, dries up the crops and checks the flow of streams. They want more forest, more rain or humidity and fuller streams—the latter of which, they fancy, will come with the first. But this is not proven; for when New England was a dense wilderness there were very severe droughts, with all their evil consequences. But I shall again allude to this farther on. These gentlemen seem to forget that occasionally, if not frequently, we have so many rainy, humid and cold summers (while our woodlands are or have been decreasing) that our streams overflow their banks, corn will hardly ripen, our fine grapes blight or are taken by the frost before maturing, some of the best pears will not ripen up as they ought to, and there is blight and mildew in many farm products. All these evils would be aggravated by the increase of forests, if the humid or rain theory be true. And hence the question naturally arises, are not damp and rainy seasons as injurious as dry? Undoubtedly, in hot seasons there is much low land that would produce better crops, and the need of underdraining is less felt. Streams would not be so full; but they are of little use to the farmer in the growth of crops, whatever they may be to the manufacturer—though he is now looking to steam as a more certain motive power. Fruits would ripen better, and there would be less mildew. Some observers have supposed that in such seasons the great evaporation from the earth brings up, for the use of future crops, the deeper mineral riches of the soil. Dry seasons are usually healthier than wet; and some physicians, thirty years ago or so, cautioned rural dwellers not to plant shady trees near their houses, but to let in the sun. I think, however, many country dwellings have hardly enough (sacrificing much to lawn, as they do), for on a hot day their shade is grateful to contemplate and to enjoy.

The forests of Massachusetts, if not of most of the New England States, are supposed to be increasing, not by systematic planting (which is not a necessity), but simply by the neglect of lands; and they are not now regarded as causes of rainfall, if they may tend to equalize the distribution of moisture—though their soil is too much shaded to give out as much vapor as an open field. But even if we had no forests, there are other large sources of evaporation and moisture. In Massachussets there are something like 90,000 acres of lake surface from areas above ten acres, besides the river surface, which is probably as much more; then come our swamps and meadows, the many ornamental trees and private plantations, and the shrubs and flowers of our gardens—all exhaling moisture on a sunny day, and absorbing much of it at night to give out again to the next hot sun. The cultivated crops, also, must exert the same influence on the atmosphere, and so with grass land, which probably condenses more vapor at night than forest soil.

The idea, to some degree extant, that brooks are fed only by springs from hills and mountains covered by forests, seems not to have a sufficient basis. We frequently find from the foot of large hills water flowing freely, if not perpetually, whether covered with wood or not. The water percolates from the great mass of earth above, where it has been collected from previous rains, and naturally forces itself out at their bases. And small streams seem in a great degree to be supplied by water from surtace drainage and percolation from their contiguous banks as they meander through the low lands. The destruction of woodland may sometimes dry up brooks, but I have never known a case.

In a well-written essay on the "Forest Interests of Massachusetts," by Mr. W. C. Strong, read before the Massachusetts Horticultural Society, in the winter of 1886, in speaking of the great crops our early forefathers raised from their new soil and the influence of moisture from the surrounding wilderness, he observes: "It is true we read of their occasional failure by reason of droughts; and it is certain that droughts occurred then as well as now. But in judging of their frequency and intensity we are to bear in mind that the plowing of early days was the merest scratching of the surface, that little or no retentive manure was used, and that at the present day and under such conditions our crops would prove uniform failures." But with all due respect for the gentleman's opinion, I think he is in error in regard to their intensity (if not their frequency), and cannot shift the evil to shallow plowing. In a diary of James Blake, of Dorchester, Mass., recording events of 1749 (Annals of Dorchester), he observes: "This Summer was the Severest Drought in this Country as has ever been known in ye Memory of ye oldest Persons among us. . . . By ye latter end of May the grass was burnt up so that ye ground looked white; and it was ye 6th Day of July before any Rain (to speak of) came. . . . Many Wells, Springs, Brooks & small Rivers were dried up that were never known to fail before. And ye Fish in some of ye Rivers died. The Pastures were so scorched that there was nothing green to be seen, and the Cattle waxed poor, and by their lowing seemed to call upon their Owners for Relief, who could not help them. Although the Grass was Eaten so close as that there was but a few thin spires to be seen, yet several Pastures took fire and burnt fiercely." On his own land, which caught accidentally, the fire "blased and flashed like Gun Powder, and run very fast along the ground. . . . Where there was lumps of Cowdung, it would burn till ye whole lump was Consumed, & burn a hole in ye ground." On the 6th of July rain came, and afterwards there was a sufficient quantity, so that the lands looked green again, and there was a good harvest. If such a fearful and destructive drought could occur with a surrounding wilderness, where shall we look for succor to-day?

Mr. J. C. Gray, of Cambridge, Mass., more than thirty years ago, wrote a paper on the climate of New England, in which he observes: "That

droughts are in truth more frequent and severe in every part of our country at the present day than a century ago, is a proposition for which we find no countenance in any statistics which have come down to us." Mr. Gray quotes from Smith's Diary (Famouth, now Portland, Me.) to the effect that "such dry spells" occurred in ten years out of the twenty from 1743 to 1763 inclusive, while four of them were in consecutive order.

In connection with this point, I would put the following query, or queries: If in an area of 400 acres (we will say) of dense forest, in the centre four acres were cleared up and devoted to farm crops, would the spot be warmer or colder in summer than the fields at a distance from the forest? And would the influence of such forest generally be favorable on the crops?

The Middlesex Fells, in which Mr. Strong takes a deep interest, is a tract of wild land of about 4000 acres, lying nearly seven miles north of Boston. It is said it could be purchased for about $100,000, and futile attempts have been made to secure it for the past fifteen years. "Here then," observes Mr. S., "is an enterprise in which the whole State is interested. The State should therefore assume it." This proposition was afterwards virtually sustained by the Massachusetts Horticultural Society, by appointing "a committee for the purpose of obtaining more efficient legislation for the planting and protection of forests in Massachusetts, and particularly of the tract known as the Middlesex Fells." But in a local matter like this it would be surprising if the government did anything more than to give it the protection of general laws—which have not heretofore been satisfactory to its friends. Perhaps they cannot decide upon what they really want. Mr. Elizur Wright, the father of the scheme, procured a bill a few years ago by which the adjoining towns to the Fells might make the purchase jointly by a two-thirds vote. But nothing has been done, as no one seems to have the desire or the courage to commence. Aside from the purchase money, it would cost a fearful sum to keep it in decent order, wild as it is hoped by some to be. Pecuniary profit would be out of the question. And if not "swept and garnished" like an arboretum, the fire-fiend would be almost sure to devastate it. Besides the tract, as a unit, is too large to manage, or to be kept from more useful purposes. It now embraces several fine residences, and more may be erected without injuring it much, if any, as a woodland with all its real or supposed advantages.

The Rev. J. B. Harrison, of Franklin, N. H. also read an essay on the subject under comment, before the Massachusetts Horticultural Society, and took strong ground in favor of forest-planting and forest-schooling by the nation, so as to make forestry a profession for young men, as we teach them at the military and naval academies! Forbearing further remarks, however, I would briefly say that the friends of forestry need not, I think, be alarmed lest the country dry up, nor, in the expression of opinions so unpopular as those we have noticed, ought they to be surprised that they have so little influence with legislatures.

West Medford, Mass.

FOREST TREES FOR KANSAS.

BY THOMAS BASSLER.

On page 337, Mr. Bennett, in speaking of the Adirondack wilderness, says or implies that these mountains would make a good nursery for forest trees, to be raised by the Government and planted on the prairies.

Considering the expense of shipping nursery stock so far, and the liability of death, from careless handling on the part of the settler, I should consider the scheme proposed as being impracticable. If the Government wanted to establish nurseries for the raising of forest trees, it could get the land as cheap here as in New York, and by making several nurseries at different places, all under the control of our Agricultural College, it would be making the work practical.

Speaking of the Sugar Maple, he says it will adapt itself to almost any locality, is easily grown, and about the safest to plant. I beg leave to differ. The hard Maple will not, or has not yet, adapted itself to the climate of Kansas, and if a tree making four feet in height in twelve years is growing easily, then it will grow easily in this State. And, on the whole, we do not consider it a safe tree to plant in this country.

Geuda Springs, Kansas.

EDITORIAL NOTES.

The Useful Woods of the United States, as shown at the New Orleans Exposition.—By Charles R. Dodge. Being part of a report of Mr. Wm. Saunders, representing the U. S. Department of Agriculture. Published by the Department of Agriculture.

The wood-working and timber interests of the country have cause to thank the Department of Agriculture for this very timely publication. The kind of wood out of which everything on exhibition was constructed, from a railroad car to a fiddle or a tooth-pick, is clearly given, with many notes of interest in regard to them. We regard it as one of the most valuable contributions to the literature of American Forestry that has yet appeared.

CORSICAN PINE TIMBER.—The Larch is being fast abandoned by British timber-planters, and the Corsican Pine, Pinus Laricio, is praised as being the best to take its place.

LOUISIANA'S BIG CYPRESS.—The *Pioneer of Assumption* says, that among the seventy-nine specimens of native woods already procured by the committee chosen for the purpose, and now in the possession of custodian E. P. Helluin, to be sent to the World's Exposition, is that of a cypress tree measuring 8 feet 2 inches in diameter. This mammoth tree was felled and hewed by Mr. John Christian, on Four-mile Bayou, some fourteen miles in the interior, which operation consumed seven days, as much as three or four men being employed at the same time. The tree, however, is what is known among lumbermen as "windshake" split, but otherwise sound as a nut; so much so, indeed, that a dug-out is being made out of a part of it.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

EFFECT OF THE SEASON ON FLOWERING PLANTS IN BELGIUM.

BY LOUIS EECKHAUTE.

The warm weather we had in the end of September and during October advanced the growth and flowering state of many out-of-door and greenhouse plants. Amongst the first, I noticed flowers of apples and pears, and on hardy shrubs, Laurustinus, and here and there some Rhododendrons—they were Prince Camille de Rohan, Ochroleuca and even the common Rhododendron Ponticum. In greenhouses it is quite a wonder how some plants are advanced, and no doubt florists will have flowers this year much earlier than in other years. A Camellia, two feet high, had given already a dozen flowers on the twelfth of October, and since then all the others are shed. The same happened with an Augustina superba (Saccoana nova), which was open at the same time with half a dozen flowers, and has had several since. I also found at that time Alba plena, Imbricata, Jardin d'hiver, noblissima at this date (6th of November). Other sorts give me some flowers—they are Striata Donckelaeri, Lady Hune's Blush. In brief, there are already more Camellia flowers now than last year in January or even February. Azaleas have the same aspect as it were in the springtime, the eyes in the neighbourhood of the buds give now young shoots just as they do in February in other years. Some flowers have already been seen on Sigismond Rucker, Eliza Liebert, Mm. Camille, Von Langenhove, Versicolor punctulata, Ceris, Mm. Vanderfruyssen, and just the same as the Camellias, all those Azaleas were in greenhouses without any heating at all. All is the result of the warm weather.

St. Denis, Westrem, near Ghent, Nov. 6, 1886.

[In America, the fall-flowering of apples and pears comes from the loss of leaves before they are mature by fungus attacks or extra dry weather,—and is not due to an open or warm October.

The facts in relation to Camellias under glass are extremely interesting. In America, at this time, this flower is not appreciated for winter flowering, the rose having supplanted it in public favor. But in former times when it was popular, no amount of sun-light or fire-heat would bring them into bloom much before New Year.—Ed. G. M.]

BLOOMING OF THE SWEET POTATO IN VIRGINIA.

BY D. O. MUNSON.

Relative to the bloom on sweet potato plants, on which several articles have appeared in your valuable magazine, would say that I have been cultivating sweet potatoes more or less for thirty years, and never knew them to bloom until the summer of 1885; then they blossomed very profusely in this section, owing, I think, to the severe drought we had in May and June of that year. The flowers resemble very much the common Morning Glory, and one of my neighbors, supposing this vine had got in among his potatoes, pulled up quite a number of plants before he discovered his mistake. Do not think any of the flowers matured seed. *Falls Church, Va.*

[Mr. M. is undoubtedly correct in the suggestion that the extra warm and dry season influenced the blooming of the sweet potato that year. The plant is a well-known lover of heat, and flowers always at the end of its season's growth. It will then naturally flower in those regions where there is a long summer, and not where the summers are short. We did not know, however, till the correspondence in our paper developed the fact, that the summers anywhere in the United States were long enough to enable it to flower or seed, and the inference has been that all the varieties have been produced by bud variation. It is the latter fact that gives great scientific and practical interest to the question.—Ed. G. M.]

WILD FLOWERS OF DAKOTA.

BY JOHN W. DUNLAP.

In your GARDENERS' MONTHLY for October, Mr. Thomas Bassler speaks of the pretty wild flowers of Kansas, and I fully endorse his opinion that many of them are well worthy of cultivation. Never having collected plants in that State I judge its flora will be much like that of other Western States. He mentions the names of only three plants: two of them, Œnothera Missouriensis and speciosa. The last I have never seen, but Œnothera cæspitosa I have found in great abundance in the valley of the Platte. I hope Mr. Bassler will do all in his power to create a taste for this delightful study by pointing out the localities where such things may be found. Having several times looked over the flora of the Western States, I have always made additional discoveries of plants which I had missed in my former journeys.

Two years ago I visited Long Lake, Dakota, and there found Heliotropium curasaviscum. This is the most beautiful of the Heliotropes—pure white with lemon eye, and delightful fragrance. Long Lake is seven miles from Woonsocket and is a long shallow lake. Most of the water evaporated during the summer heats, leaving a large strip around its margin highly impregnated with the washings and salts of the burned prairies, on which the Heliotrope grows with great luxuriance, sometimes many acres in one patch. What seemed curious to me was the fact that nothing else grows on it but Ammannia latifolia, and that sparingly. If Mr. Bassler will visit this bed of Heliotrope I think it would delight him as much as it did me and he will find in his journey to the Lake many interesting plants, such as Kuhnia eupatorioides, Echinacea angustifolia, Aplopappus spinulosus, Lepachys columnaris, Lygodesmia juncea, Grindelia squarrosa, Malvastrum coccineum, Oxytropis Lamberti, Cleome integrifolia, Schrankia uncinata, Dalea alopecurioides and many others. I hope this catalogue of plants will not be tedious.

Milwaukee, Wis., Nov. 15, 1886.

WILD FLOWERS IN THE BERKSHIRE HILLS.

BY MRS. M. E. WILLIAMS.

As the time for renewing my subscription to a valued paper comes at this Christmas time, I feel like sending thanks for pleasures received and many good wishes for a "Happy Christmas and a prosperous New Year" to those concerned in its publication. I regret Mrs. W. (page 309) did not meet with my success in hunting wild flowers among the Berkshire Hills as we must both have been looking within a few miles of old Everett.

Though the growth of Lobelia cardinalis is, I believe, limited, and I did not find it, yet it came by hand of a friend into my room, glowing in the depth of its magnificent red, equal to any I ever saw. The large blue Lobelia, too, abounded; golden rods were brilliant and glorious, of many kinds, including rigida and squarrosa. Harebells, of sweetest blue; Potentilla tridentata kept stray flowers for me while its leaves were tinged with autumn red; several of the Orchid family, including a tiny green one, and the pretty purple fringed Orchis. Never were daisies prettier nor Rudbeckia more glowing; and the asters were at home in their beauty. The curious beaked hazel-nut was there as well as the largest leaves and most thrifty growth I ever saw of the Arbutus. Out of bloom, of course, were the Trillium, Actæa and Clintonia, but their berries gave us "The red, white and blue," while the trailing runners of Tiarella crept over the mossy banks, loving neighbors to the deep-green Coptis leaves, and shaded with our native Yew with its exquisite touches of crimson color. The sun-light coming through the trees fell softly on patches, fifty feet in diameter, of dwarf Cornel, a perfect wealth of green and red, and now and then a belated white blossom late in August. Nearly a dozen of the daintiest, tiny blue violets gave themselves to my keeping from the softest and greenest of meadow grass, showing that Spring extended loving greeting towards the Autumn, while the witch-hazel shook out a few golden petals by way of good-bye, on my last woodland walk, the first week in September. In one spot, bedded in deepest sphagnum, were creeping plants of our native Calla, pitcher-plants of curious veining, the two cranberries, tiny Chiogenes, little Utricularias, Drosera rotundifolia, longifolia (perched on its caudex)—all neighbors to the fragrant Balsam Fir. The grass of Parnassus was in my hand for the first time; so, too, with the lovely bear-berries carpeting the rocks; while, to crown all, that shy beauty, the Fringed Gentian, followed me from the hills, and, when released from its tin traveling box and placed in the sunshine, opened its "eyes of blue" with their belonging fringes.

These are some of the plants that ministered to my delight in that beautiful "hill country," and I thought perhaps they might interest you—perhaps even recall a happy ramble over the same locality.

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EDITORIAL NOTES.

Change of Color in Flowers.—The man of observation is frequently derided for his statements by the man who goes by common sense,—yet it must be conceded that once in a while the common sense man is beaten out. Now there is the old notion that the original of the many colored polyanthus was obtained by planting the common yellow primrose of the English woods, upside down. Common sense laughs at this,—and we must confess that common sense has, in this, our sympathy. Yet, what are we to make of such a positive statement as this which we find from what appears to be a sensible correspondent of *Gardening Illustrated*:

> "I will endeavor to satisfy the curiosity of 'X.' (p. 383), for I fail to see the 'foolishness of jumping to conclusions and of making deductions from' well-founded fact confirmed by the evidence of actual experience. To decide a controversy, three ordinary primroses were taken from a hedgerow near my residence, and planted in my garden in the year 1883, whilst in full bloom. They were placed in the ground with the flowers and foliage downwards, with the roots uppermost and lightly covered with earth. Two of them succumbed to this somewhat unnatural treatment; but the third put forth some, at first, tiny and weakly growth, which by autumn developed into a fair-sized, healthy plant. In the spring of 1884 it produced some flowers of a clear, bright, rosy-purple, and the shade of color was so good that I had the plant potted. In 1885 it bloomed profusely, and was really very pretty, and the flowers, as to size and color, remained true to the new departure; the same thing was repeated this year. After flowering it was put aside, and unfortunately, overlooked, and has perished for lack of water. I know two ladies, each of whom, from a similar trial, has obtained a like result as to change of color, and anyone can easily make an experiment for himself. My observation has taught me that plants under abnormal circumstances frequently change both in form and color."

Bees Eating Grapes.—The subject was again earnestly discussed at the meeting of the Columbus, O., Horticultural Society, October 26th. A number of growers furnished the actual experience that the bees eat the fruit. Entomologists, as usual, contending that if they did eat the berries, it must have been some other insect that first cracked the skin for them. All this may be true. The grape grower desires to protect his fruit from being devoured. What assists the bee to devour is of secondary importance.

The Cause of the Potato Rot.—The *Pharmacist*, of Chicago, referring to the letter of our English correspondent on the cause of the potato rot, takes some exception to the exclusive use of the term "practical men" by the potato grower, in connection with the discovery of the cause of the disease. It is the one who takes his microscope and looks into the matter to see what is actually there, and notes what is doing the work, that should be called the practical man,—while it is one who does not do this, but places his guesses in the place of practical observation, that should be dubbed the mere theorist. "Decay does not come about of itself," says the author of the criticism, "something does cause decay,—and if it is not the small fungus, Peronospora infestans, it must be caused by something else. To say that disease is caused by a weakened vital power will not do. Weakened vital power may invite disease, but what is disease?" and the author suggests that if not in the nature of Peronospora, then it is probably Bacteria. They may cause the disease; and the Peronospora may follow. Though thus criticising, he on the whole commends the communication of our correspondent.

Native Country of the Banksian Rose.—This was introduced from Chinese gardens, its native locality being unknown. Professor Crepin, one of the best authorities on Roses, now announces that it is indigenous to the mountains of Mo-So-Yan, in the Chinese province of Lan Kong.

Persistence of Varieties.—England is not so trying on the constitution of a variety as America is, hence varieties do not run out as rapidly as here. The very old Keen's seedling Strawberry is yet one of the most popular of their kind.

The Coloring of Autumn Leaves.—There can be no doubt that climate has much to do with the coloring of autumn leaves,—but a habit, once acquired, is hereditary. The climate has, no doubt, been the main agent in giving American trees their beautiful fall coloring, yet when removed to the moist and very different climate of England, the coloring persists, and may do for many generations to come. The *Gardeners' Magazine*, of Oct. 23rd, says:

> "The Liquidambar, L. styraciflua, is now rapidly acquiring its proper autumnal colors in the vicinity of London, the decline in temperature since Sunday last having made a considerable difference to this and many other trees. The scarlet oak, Quercus coccinea, is also conspicuous for its splendour of color, although three weeks since we saw a few specimens in brilliant array. Relative exposure and dryness of soil have much to do with the degree and the time of autumnal coloring."

Cure of Poisoning from the Common Poison Vine.—Dr. Frank Jones, of St. Louis, is quite positive that a strong solution of bi-carbonate of soda is the best of all specifics for the cure of the poisoning by Rhus toxicodendron. He applies it to the pustules, which they at once dry up.

The American Water-weed.—This is the name given to our small aquatic weed, Anacharis, or Elodea canadensis, which, on being introduced to Europe some years ago, found itself so much at home, that it actually choked up some streams and lakes, so as to almost prevent pleasure boating. Dr. Barnes, of Hanover, now contends that it is not only not an unmixed evil, but an extremely valuable plant, for it "destroys the germs of malaria and dysentery," and he recommends that it be introduced to waters where it does not already exist. He says that fish are always healthier where the plant abounds.

An Insect Enemy of the Strawberry.—Belgian Pomologists are complaining of the destructiveness of a myriopod or centipede worm, which they describe as Blaniulus guttulatus.

A New Grape-vine Insect.—Belgian papers complain of the serious ravages of a small insect of the red spider class, known as Phytopus vitis.

A Giant Rose.—Mr. Takasima, tells the *Journal des Roses*, that in Japan there is a species of Rose, very spiny and sarmentose, which interlaces its branches among those of tall trees in the forests of the centre of Japan, where it is extensively found. The flowers are white, showy and have some odor. It appears to be nearly identical with our Cherokee Rose.

Rose Gloire Lyonaise.—This is figured by the *Journal des Roses*, which believes it to be a true white hybrid perpetual Rose. It has been raised by M. Guillot Sons, of Lyons.

Seeds of Depauperite Plants.—At a meeting of the Academy of Natural Sciences of Philadelphia, a specimen of a grass, Setaria viride, was exhibited not over half an inch high, but which had a large number of perfect seeds nearly mature. It was sent by Mr. Meehan to show that such minute plants might grow and produce seed annually for many successive years, the plants each year reproducing themselves among other vegetation, without any one being aware of their existence. When such tracts were ploughed up, and plants like this grass get a good chance to develop themselves fully, it would appear that there had not been any plant of the species growing for years, and the fact used to illustrate the long vitality of seeds in the earth. It might be that there was good evidence that cases of long vitality were undoubted; but it served a good purpose to point out where error may creep in.

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SCRAPS AND QUERIES.

Acæna microphylla.—"F. G. R.," New Orleans, says: "A writer in the last number of *The Garden* (No. 783, Article "A Northern Garden") recommends in strongest terms Acæna microphylla as a foliage border plant for winter use. Will you be kind enough in the next issue of the Gardeners' Monthly to inform your readers whether this new candidate for winter decoration is raised from seed or propagated by cuttings, and where it may be obtained, as it does not appear in any of the nurserymen's catalogues."

[We do not know Acæna microphylla, but most plants of this genus are herbaceous plants, having their home chiefly in Chili and Peru, a few progressing northwardly to the boundaries of the United States. They would probably succeed in Louisiana or where there is not much frost. The general aspect of the foliage of these plants is much as in the Agrimony of our woods—or a Potentilla or Geum may give some impression of its character. It belongs to the same natural order and is a near relative of these plants, and can no doubt be raised from seed. Possibly our large seed firms could get seeds from their French or German correspondents.—Ed. G. M.]

The Melon Pear.—We had, some time since, an inquiry as to what was this new fruit which was being pushed, as they say, to an enormous extent. We have inquired of a friend who has some acquaintance with it, and have the following account from him:

"The Melon Pear is Solanum melongena of botanists. It is a shrub, grows about two feet in height and breadth. The plants should be set out in the garden three feet apart each way, or if cultivated with a horse, in rows four feet a part, plants two feet in the rows.

"In about six weeks after being set out the fruit will show and commence ripening in about three months after planting and continue to ripen until frost. In locations where the ground does not freeze too deep the plants may then be cut down and covered with a few inches of soil until spring; or they may be taken up and kept in the cellar or greenhouse until danger from frost is over, when they may be again set out. Unripe fruit has been picked in October, before frost, and kept and ripened until the middle of February. The plant is a native of the Central American highlands where the thermometer falls to 30° Fahrenheit, showing that it will bear slight freezing. Where there are no frosts it bears continuously the whole year. It is an enormous bearer, but fruits best in a cool climate. The flowers are numerous and of a delicate shaded violet—the fruit, of the size and shape of a hen or goose egg; a beautiful pale orange with waves of bright violet, making the plant, both in fruit and bloom, an unrivalled addition as a decoration for the garden in summer, or greenhouse in winter.

"The fruit is of the consistence of a pear, with the flavor of a fine musk-melon, but also a charming acid, delightful in allaying thirst."

We were surprised to learn that the plant is not a pear at all, but one of the Solanum family; and it is to be regretted that in the hunt for common names something less likely to suggest deceit has not been discovered. If it be, as our friend says it is, Solanum melongena, it is not likely to be even new, for that is simply the egg plant, pure and simple, of which there are numberless forms, now united under the general name of S. esculentum. Possibly it may be a very interesting and desirable form notwithstanding its suspicious introductions.

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

Rapid Traveling.—What a change in favor of gardening work has come over the world by reason of improved means of transit, since the days when some enthusiast had to divide his short rations of water with his beloved coffee plant, which he was trying to keep alive by having it in earth in an old hat! A nurseryman hands us some correspondence as illustrative of this rapid movement of trees. An order was sent from a gentleman in the south-east of England, on the 5th of October, for a large assortment of American trees, which had to go across the Atlantic to Liverpool, and thence a hundred and fifty miles through England.

A letter, dated 6th of Nov., says, "Enclosed draft for the trees, which arrived in excellent condition, and are all planted." Who would have thought, a few years ago, that an American nurseryman could dig up and pack a large order from England for trees to grow across the Atlantic, and that in 30 days he should have the order—send the trees, get them there, and learn that they had all been received and planted? Verily, the world does move, and goes on rapidly too.

Commissioners of Fairmount Park.—Mr. W. M. Singerley has been appointed by the Board of Judges to the vacancy in the Fairmount Park Commission. Mr. S. is a genuine lover of Horticulture, and it is very pleasant to find the judges of the courts once in a while appointing a gentleman of this character to a position where some knowledge of Horticultural necessities ought to be a prominent requirement.

Camellia.—Now that the Chrysanthemums are on the wane we are beginning to look to another Chinese product, the Camellia. We hear occasionally people speak of Cameelia, but the real name was Camelli, with Camellus, Camel or

Kamel as aliases. He was born, according to a statement by Father Paque, at Brünn in Moravia, in 1661. He became a member of the Order of Jesuits, and passed a large part of his life as a missionary in the Philippine Islands, where he died on May 2, 1706. At Manilla he established a free dispensary for the relief of the indigent and sick, and entered into communication with Ray and Petiver. In the Philippines Camelli made rich collections and many drawings. These drawings are now in the possession of the Jesuit College of Louvain, to which they were presented by Count Alfred Limminghe, who bought them at the sale of A. L. de Jussieu. The eminent French botanist attached much value to these drawings of Camelli, and attached many notes and comments to them. The drawings of Camelli are said to be so beautifully executed as to resemble engravings rather than pen-and-ink sketches. The botanical plates amount to 257 in number. These plates were originally intended to illustrate an appendix to Ray's Historia Plantarum, but which intention was not carried out for financial reasons.—*Gardeners' Chronicle.*

Cost of English Roses.—A London paper under the heading of "good news for English Rose growers," remarks:

> "There is a statement in an American exchange to the effect that English Roses can be sent to America, and that in spite of freight, customs' duties, and incidental expenses, the Roses cost the recipient less than is demanded for plants of the same description in the States, while no American dealer offered so choice and extensive a list from which to make a selection as the English one."

We doubt this. Nearly all the "cheap" roses we have seen from England are grafted on Dog Roses or Manetti and very far from being of the "same description," if quality is intended, as the American plants on their own roots.

Large Begonia.—In Germany they have produced Begonias with male flowers 5 inches across. This is certainly enormous and they give it an enormous name,—nothing less than Begonia hybrida maxima floribunda. Yet we do not know whether this is not better to English speaking people than its common name, for we are told that in Germany it is said to be ausserordentlichenblüthenreichthum,—but at 5 inches across it ought to be all that the name implies.

Winter Prospects in New Orleans.—A correspondent referring to December 6th, writes: "An unusually early 'freeze' (mercury at 28° F.) occurred in this latitude yesterday and the day before. The result was as though a fire had passed over our garden. In somewhat sheltered situations the pretty little Aristolochia elegans of which I sent you some seed, was unhurt."

Prof. Alphonse Decandolle.—Though in his 87th year, this distinguished botanist is yet so hale and hearty, that by the aid of glasses he is yet as well able to dissect plants as in his younger years.

Honors to Horticultural Editors.—The labors of the editors of horticultural magazines seem to be highly appreciated by the governments and people of the Old World, judging by the number continually receiving public honors. An excellent horticultural magazine is the *Evergreen*, published in Leyden, in Holland. Its editor, Mr. M. H. Witte, has just received from the Spanish Government the honor of "Chevalier of the Order of Isabella the Catholic, for his distinguished services in Horticulture."

Greenhouses of Storrs, Harrison & Co.—These cover 45,000 square feet; and, unlike many greenhouses in commercial establishments, are models of neatness, lightness and strength.

Prof. C. V. Riley.—Prof. Riley's health has much improved of late, and he writes that he trusts before long to bring up some of his correspondence; replies to many letters having been necessarily delayed.

Col. M. P. Wilder.—On the morning of December 16th this great and good man seemed in his usual health, breakfasting with his family. At half-past ten the same morning his life-work was done, and genuine horticulture in America met with one of the greatest losses it has experienced in many years. His love for the art had no mercenary elements. To him the axiom of the philosopher, that a garden is the purest of all human pleasures, was solid reality and not mere poetry—and his example and teachings have given pleasure to thousands who have trodden in his path. He was born at Ringe, New Hampshire, September 22, 1798. He was educated at the public school, and had one year in the higher branches at the Ipswich Academy when about twelve years,—afterwards, until he was sixteen he had private tuition from the village clergyman. Exhibiting talent his father offered him the choice of going to college, or working on the farm, and he chose the latter, and in this way fixed the taste for agriculture and horticulture that became so marked a character through life. Beside the farm the father had a store at Ringe, and at twenty-one years of age, the firm became Samuel Locke Wilder & Son. After four years he left his father, and started in Boston the firm of Wilder & Payson, then Wilder & Smith. In 1837 we find him as Parker, Blanchard & Wilder, in the wholesale commission business,—and while here became Director in a number of insurance and banking companies. His business ventures seem to have been always successful, and he amassed a considerable fortune.

Besides continuous labor in business pursuits, he devoted a large portion of his time to public affairs. At sixteen he joined the New Hampshire militia, becoming colonel of his regiment when but twenty-six years of age. In 1857 we find him the commander of the Ancient and Honorable Artillery Company, an offshoot before the Revolution of the Royal Artillery Company of London. Prince Albert, who was an officer in the London company, was made, through the efforts of Col. Wilder, a member of the Boston company on the 219th anniversary of the founding of the company, a mark of good will Prince Albert never forgot. In 1839 he was elected to represent the Dorchester district in the State House of Representatives. In 1845 he was a member of the Executive Council. In 1850 he was State Senator and chosen President of the Senate. He was a candidate for Governor, but was beaten by Gardner,—and in the interest of conciliation, went to the Baltimore Convention when Bell and Everett were nominated for President and Vice President of the United States. When there was no longer hope of conciliation, he became a staunch supporter of the integrity of the Union. In 1820 he married Miss Tryphosa Jewett, in 1833 Miss Abigail Baker, and in 1855 her sister Miss Julia Baker. He has had fourteen children. His domestic life has ever been a singularly happy one.

To us his horticultural career is a highly interesting one. His grounds at Dorchester formed a beautiful specimen of garden art, and it was his great delight to have those enjoy it with him who could appreciate the beauty. To this end all sorts of pleasant contrivances were resorted to. Many years ago, when the writer of this was a comparatively young man, and devoting his time to the pursuits of landscape gardening, he received a pressing invitation to visit him professionally at Dorchester, and he wrote for his terms. The fee was named. When he reached there Col. Wilder remarked, "Well, let us at once attend to business and we will have some pleasure afterwards. Supposing I wanted to knock down this house, and build another on one of those two locations, which would you advise for the purpose?" It seemed a strange question, but it was answered. "That will do," said he ; "come in." He at once wrote a check for the amount named, and this ended the "professional services." The few days spent in Boston subsequently were very happy ones. Under the guidance of this good friend the leading country seats famous for good gardening were visited, and this recollection of Boston has always been one of the pleasantest in the writer's memory. Besides a love for true garden beauty, as we understand by the art of landscape gardening, he was fond of experimenting and improving. He always had in his vest pocket a camel-hair pencil and a pair of tweezers with which he used to cross-fertilize fruits and flowers when the opportunity offered. When the Camellia was so popular a half century ago, he applied himself enthusiastically to its improvement. Many of his seedlings took high rank and florists made him large offers for some of them. One, Wilderi, he at last sold for $1000. Strawberries, grapes, and pears, in innumerable varieties, filled his fruit garden—and their comparative merits noted. Fruit culture was, however, fast getting into inextricable confusion by reason of a multiplicity of names for the same varieties. To remedy this he suggested the American Pomological Society—by which the present admirable order was drawn out of confusion. There is no doubt but the proud position which American fruit culture holds in the eyes of the world comes from the establishment of this society and the good deeds of Col. Wilder in connection with it. He was himself sensible of the good work this body had accomplished and proud of its success—and he contributed largely of his private means as well as of hard, earnest work, in making it a lasting and thriving body. He was annually elected, frequently amidst the the wildest enthusiasm, to the Presidency, and only a few days before his death the writer had a letter from him abounding with enthusiasm over the prospects of again meeting his friends under his Presidency the coming autumn.

As for the Massachussets Horticultural Society, of which he was one of the founders and able sustainers, they will, no doubt, tell us in due time of their estimate of his loss.

As a presiding officer, he was, possibly, one of the ablest men who ever undertook to manage a public body. Always fully appreciating honors paid to himself, he was at the same time delighted when honor was paid to his compeers, and continually suggesting some method by which they might get justice done them. Even men whom he could not personally have great regard for, always had from him the fullest credit for any public service rendered. Even when presiding at a public meeting, and some miserable nuisance would disgust the assemblage by his vapid talks, Col. Wilder's aptness would find a way to choke him off in a manner that would make the transgressor feel rather complimented than rebuked.

An overflowing love for the whole country, as well as for his friends individually, was one of his marked characteristics. The notice in another column, of our portrait of Mr. Hovey, is from his pen, but a few days before his death; and we cannot better close this hurried notice as characteristic of the man, than by quoting his own words, in a recent address of his before the New England Genealogical Society :

> " Human life is changing and transitory ! A few more days, a few more months, and this tired brain and this languid tongue will have cast off their threadbare, wornout covering : but the spirit shall continue to praise God for His wonderful works in this Western World, and the blessings which have flowed from the influence of New England character. We shall pass away, and the dust of past and future generations shall be commingled with ours in one common grave. But we trust our society will live on and on, and be more and more appreciated for the work it has done and is doing, so that the record of our own New England and its families may be perpetuated with historic continuity while the Anglo Saxon race shall have a place in the annals of time."

Up to the last he maintained that happy combination of manhood dignity with the innocent boyish pleasures of youth. A few years ago the writer "dropped in" on a hasty run through Boston. He was directed to the garden, and there Col. Wilder was at length found, sitting under a beechen tree, and, boy-like, with a jack-knife, cutting his initials on the bark, with the date and day.

We fear it will be a long time before horticulture receives the blessing of another Wilder. We can only hope and pray.

AUGUSTE VAN GEERT.—In one way or another this eminent Belgian florist was well known in America. A recent *Gardener's Chronicle* says:

> "We greatly regret to have to announce the death of one of the famous horticulturists of Ghent, Auguste van Geert, who died, somewhat suddenly, on November 24, at the age of 68. M. van Geert was one of the founders of Ghent horticulture. He was the son of Jean van Geert, the associate of Verschaffelt and van Houtte. Auguste van Geert at the early age of twelve years entered the establishment of Messrs. Knight & Perry at Chelsea, the predecessors of the Messrs. Veitch, and soon entered into relations with the Loddiges, the Rollissons, the Lows, and other famous English horticulturists of the day. Scarcely more than a fortnight since Auguste van Geert took part, in apparently good health, in the jubillee festival of his son-in-law, Edouard Pynaert. M. Auguste van Geert had been ailing for some years, but his sudden death has come as a surprise and a profound grief to his friends. Of late years M. van Geert took great interest in the culture of orchids, of which he had a large private collection. M. van Geert occupied a foremost place in Belgian horticulture, and received many testimonies from his friends and from the Government which evinced the esteem in which he was held. We were ourselves witnesses, on one occasion, of a touching scene, in which his daughter, Madame Pynaert van Geert, offered her congratulations to her father on an occasion when her father was the recipient of some state honor, and which made a great impression on us at the time, as being so very un-English, and yet so thoroughly appropriate on both sides."

FREDERICK EMILE SIMON.—Botany and horticulture, of all other branches of art and science, owe a lasting debt of gratitude to chromo lithography. The inventor of this beautiful art, M. Simon, died recently at Strasburg, in his 81st year. He had been decorated by the Government of his country with the insignia of Chevalier of the Legion of Honor for the distinguished services his discovery had been to humanity.

DEATH OF A VETERAN EDITOR.—Some Horticultural Editors live long, in spite of the exacting and continuous nature of their duties. The death of Mr. Joseph Bermenn, the Editor of the *Illustrirte Garten Zeitung*, of Vienna, has just been announced. He was in his 76th year, and in the harness to the last.

GEORGE WILLIAM JOHNSON.—"Johnson's Horticultural Works," and especially "Johnson' Gardeners' Dictionary," are so well known, and have been so highly appreciated, that our readers will be, many of them, sorry to learn of the death of the author, through the following paragraph from the *Gardeners' Chronicle*. Mr. Johnson, being deaf, seldom made his appearance in societies and conventions,—but he made up for this by untiring industry in the privacy of his own library to do as much good to his fellow-men, probably, as if he had the privileges of other men.

> "For the details which follow we are indebted to the courtesy of the Editor of the *Journal of Horticulture*. George William Johnson was born on November 5, 1802, at Blackheath. Together with his elder brother, Cuthbert, well known as a writer on agricultural subjects, George devoted his attention to chemistry, and its practical application to agricultural purposes. Their father's salt works at Heybridge in Essex supplied both the incentive to

research and the means for carrying it out. As early as 1826 Mr. Johnson began to write for the horticultural press, and to Loudon's *Gardeners' Magazine* he, in 1827, contributed a series of papers on chemistry as applied to horticulture. Other literary work followed during the time the author was reading for the bar. After being "called" at Gray's Inn, he proceeded to India, became a Professor in the Hindoo College of Calcutta. Here he did much journalistic work, including the editorship of the Government *Gazette*.

"Mr. Johnson, however, only resided in India for a few years, and on his return to this country again turned his attention to gardening pursuits and horticultural literature. In 1848 he founded the *Cottage Gardener*, as above stated, and in 1851 he became associated as Editor and proprietor with Dr. Hogg, and the friendship and conjoint labors of these two men was, to those who knew the circumstances, one of the pleasantest episodes of the journalism of our time.

"After eighty-four years of life, the long working period of which was so usefully and so honourably filled, George William Johnson was laid to his rest in the burial-ground of St. Peter's, at Croydon, on Nov. 4th."

POPULAR GARDENING.—Our vigorous and excellent young contemporary, continues to show the best evidence of good health, namely, an enormous appetite. It has already devoured a number of similar publications, and has just finished a square meal out of the *Michigan Horticulturist*, or, as it was recently styled, the *American Horticulturist*. Like other earnest eastern youths, it is evidently taking Horace Greeley's advice, "Go West young man, go West." In these days of literary dyspepsia, it is gratifying to note such healthful digestion.

A FORESTRY JOURNAL.—Notwithstanding the failures of attempts to sustain a magazine solely devoted to Forestry, the Scottish Arboricultural Society will probably bring another into the world.

SOME ADDITIONAL NOTES ON TREES AND TREE PLANTING IN MASSACHUSETTS.—By Prof. C. S. Sargent. This is one of the most useful contributions to American Forestry that has been issued for some time. He finds that so far as Massachusetts is concerned, his earlier recommendations of European trees, require emendation. Now he would prefer forests to be of American Oak, American Ash, Hickory, White Pine, and Pitch Pine. So far as railroad ties are concerned, the same fate seems to be following Catalpa that met Locust. As frequently stated in the GARDENERS' MONTHLY, the first ties on the Philadelphia, Wilmington and Baltimore Railroad were of Locust,—in that early period of railroading, it being thought that durability was of first importance. In less than one year it was discovered that elasticity was of far more importance than indestructibility, and in less than a couple of years they were all taken out and replaced by Oak. No one seems to have learned anything from those facts. Each experimenter prefers to spend his own money and find out for himself. Here we learn that the Boston and Providence Railroad Company have been over the same ground. In 1878, they put down American Larch, White Oak, European Larch, Western Catalpa, Ailanthus, Black Spruce, Southern hard Pine (?), White Elm, Hemlock, Canoe Birch. The Elm and Birch seem to be fairly satisfactory as any, but the White Oak best of all. The necessary replacing fairly began in 1882, with the removal of two Ailanthus ties; but one remains on the track but little worn and apparently as sound as when laid down. Crushing weight is the foe to a railroad tie, and the elasticity that will ease this is of more consequence than density or mere durability in the wood itself.

Even here, as in forestry experiments, reputation of the timber may suffer from special circumstances. Any one who has watched a passing train must have noticed that some ties do not lie as solid as others. The rail bends slightly under the weight of the train, and the crush on that tie must be immensely greater than on those which quietly allow the weight to pass over. This may have been the case with the Ailanthus ties that gave out early,—the existing one may have been favored. We merely point this out as a possible element in the computation.

It is just the same in the choice of trees for forestry purposes. While we have always contended that there was more value in American species for forestry purposes, than the ardent admirers of foreign trees would admit, we are not yet prepared to go so far in condemning foreign kinds, as Prof. Sargent seems now to do. We can hardly judge of the longevity of a tree or its freedom from insects by individual specimens on ornamental grounds. Exposed on all sides to wind and frost and without the food and shelter which thousands together afford each other, the single tree has a small chance. And again, nurserymen of experience begin to learn a little from experience in regard to the destructive effects on health and longevity of root fungus. The seedlings from the old long established nurseries of Europe, have usually root fungus attached to them, and are wholly unsuited to forest planting. With seed sown in wholly new and healthy ground, we believe European trees would make a much better showing.

And then there is the accident of soil, to which we have recently called attention. To take a tree such as the Larch, which delights in an altitude of several thousand feet, and comparatively rocky soil, and place it near the coast level and in rich farm land, is not giving the timber the fair test desirable to form a good judgment in a general way.

Professor Sargent's thoughts are all in the right direction as bearing on all these questions; and its effects on American forestry, when its drift is understood, cannot but be highly beneficial.

HOUSE PLANTS AS SANITARY AGENTS.—By Dr. J. M. Anders. Philadelphia: J. B. Lippincott & Co. 1886.

Dr. Anders is well-known, not only in America but in Europe, as the discoverer of the emission of ozone from flowers, and as the author of some exceedingly interesting observations on the transpiration of plants. Chiefly by his good work it is becoming an acknowledged fact that plants in living or sleeping rooms are not only not unhealthy, as former sanitarians had taught, but that their agency is highly beneficial. Such an original observer is just the person to write a book, for books generally, and flower books in particular, so often tell over again what others have told, and it is emphatically an original book. He goes into the details of the march of thought during the past to the present belief in the sanitary value of plants about our homes. He tells of malaria and how it originates. He discusses the whole question of hygiene so far as plants can influence it—of ozone and the means by which it is generated, and the happy relations of plants to the improvement of the sick, of the value of plants to consumptives. Then there is a practical chapter on the management of house plants, contributed by Professor Thomas Meehan, and other chapters on the influence of forests on general health. To say that it is an original work, brought down to the advanced science of our day, is no small praise, but it is a pleasure to add in addition that it will certainly be welcome to every intelligent person who may love to see our homes and business offices counterparts, as far as art can effect it, counterparts of the glories of forest and field.

MYOPORINEOUS PLANTS OF AUSTRALIA. By Dr. F. Von Muller. Australia, 1886. Published by the Colonial Government.

When the botanist talks of Verbenaceæ or the Verbena family, the horticulturist thinks of the small creeping plants known as Verbena in gardens. A large number of them are, however, shrubs or small trees, and when we think of the Lantana or Aloysia (Lemon Verbena) we may understand what appearance these arborescent plants would have in their native woods. Myoporaceæ is a family of plants closely related to that of Verbena, and they exist in large numbers in Australia, growing into large trees, and forming shrubby undergrowth. Up to the present time 74 species have been described from that region, and all of these are beautifully illustrated in the work before us. Besides a branch in flower, complete detail drawings, even to plant hairs and stamens, and embryos, are given. The text has not yet been written, but will probably appear next year as a part of Decandolle's Prodromus. It is a good thought, as it seems to us, to issue these pictures in advance of the body of the work, as it will familiarize the general public with the plants and enable those who give thought to the subject to communicate any fact to the author, so that everything known to anybody may get credit when the final volume appears. The practice might be extended to great advantage. Some of the species are insignificant, but many are quite showy, and would be great ornaments to gardens in our country where Gardenias, Pittosporums, and such like plants would survive. It is much to be regretted that our large cities that have fine parks or zoological gardens do not take in hand the work of putting up greenhouses for plants of this character. Unfortunately those who manage these places have no idea what to do themselves, and are above consulting with those who know, and hence if anything is attempted it is in such costly lines that the tax payers get disgusted, and everything soon tumbles with decay. The conservatory at Fairmount Park is an illustration. This was put up at a cost bordering on a quarter of a million dollars scarcely ten years ago. It took an enormous amount of boilers and pipes to keep the temperature to a tropical degree, and after all only a few Aroids, tree Ferns, and Palms will grow in it. Only ten years ago! The thing is already tumbling down, and the Commissioners ask for $50,000 to temporarily save it from falling; but Councils could only spare $5,000 for temporary shores. Why not build houses for plants that do not require this enormous expense for heat—plants that require simply to be preserved from frost. What a magnificent Australian house could be built for a quarter of a million, so strong that it would last for a century, and so cheaply managed that no tax payer would grumble at the expense. Perhaps we may have this good judgment some day, and then see these pretty plants themselves, as well as the lovely pictures Baron Mueller here gives us.

HISTORY AND BIOLOGY OF THE PEAR BLIGHT.—By Prof. J. C. Arthur.

This is a thesis presented to the faculty of Cornell University on the creation of Professor Arthur to the degree of Doctor of Science. By Pear Blight, Dr. Arthur means what is known as Fire Blight in the Pear—a trouble that has long been a source of serious controversy. Dr. Arthur has been unable to trace its earliest appearance here, though he believes it to be wholly an American disease. Coxe, in 1817, notes it as being at that time a great pest to the pear grower. Dr. Arthur concludes that Prof. Burrill is fully justified in regarding the trouble as directly produced by bacterium, different from that which produces disease in other plants, and which is described and figured here as Micrococcus amylovorus. The paper is reprinted from the "Proceedings of the Academy of Natural Sciences of Philadelphia."

PROCEEDINGS OF THE SEVENTH ANNUAL MEETING OF THE SOCIETY FOR THE PROMOTION OF AGRICULTURAL SCIENCE—BUFFALO MEETING.—From the Secretary, Prof. Lazenby.

The essays have, in many respects, as much, or even more interest for horticulturists as for agriculturists. H. E. Alvord shows that prevailing notions on the formation of dew need correcting. Professor Beal shows how parasitic funguses often control the geographical distribution of plants. Prof. Farlow notes the spots on the leaves of roses caused by the spores of Pilobolus thrown up from the ground. By the inquiries made at the meeting by Prof. Farlow, he has not, evidently, seen an account by Prof. Thos. Meehan in the "Proceedings of the Academy of Natural Sciences," published a few years ago. Prof. Forbes tells us of a contagious disease which may, luckily for us, keep down the cabbage worm. Prof. Lazenby gives some very valuable figures regarding the comparative rates of growth of forest seedlings. Mr. T. V. Munson, who has had a good experience with hybrid grapes, has a paper on the Effects of Hybridity. Mr. Scribner has a paper on Black Rot. Altogether the "Proceedings" give very interesting reading to those inquiring minds who believe there is always something to learn in this world.

CATALOGUES.—Ely, Z. de Forest & Co., Garden Almanac and Seed Manual, Philadelphia. Heinemann, F. C., Plant-List, 1886-87, Erfurt, Germany. Landreth, D. & Sons, Vegetable, Field and Flower Seeds, Philadelphia, Pa. Lenault-Huet, Nursery Stock, Ussy (Calvados), France. Levavasseur & Son, Trees and Shrubs, Ussy (Calvados), France. Moon, Sam'l C., Gladiolus, Morrisville, Pa. Pinney Geo., Evergreens, &c., Evergreen, Wis. Platz, C. & Son, German Seeds, Erfurt, Prussia. Raoux, C., Pampas Plumes, &c., N. Y. City. Reborefa, F., Bulbs and Flower Roots, Ollioules, France. Riemschneider, Ernest, Bulbs, Roses, &c., Altona, Hamburg, Germany. Sebire, P., Nursery Stock, Ussy, France. Trenkman, H. G. & Co., Flower Seeds, Weissenfelson-on-Saale, Germany. Van Tubergen, C. G., Jr., Flower Roots, Haarlem, Holland. Vervaet Eugene, Azaleas, &c., De Vos Swynaerde, near Ghent, Belgium.

SCRAPS AND QUERIES.

OUR PORTRAIT OF MR. HOVEY.—Col. Wilder, in a letter brim full of enthusiasm, received but a few days before the news of his death says he was delighted to see our portrait and sketch of Mr. Hovey in the December number. "You have done him justice and he is worthy of what you have said. As a pioneer journalist and practical cultivator he has been a benefactor to our cause, and it is proper that this record should be made where it will live long after all of us shall be buried in the bosom of mother earth."

A HORSE SOD CUTTER.—"J. W. McG.," Orange, N.J., writes: "I saw an advertisement in the MONTHLY some years ago for a sod cutter that you can put a horse to. Will you please let me know who has it for sale?"

[We have not seen any further notice of this invention than was given in the paragraph referred to. If any reader can give additional particulars, we shall be very glad to have them.—Ed. G. M.]

HYACINTH BEAN.—"Physician" inquires if any one knows what is the botanical name of a plant, said to be known as Hyacinth Bean. It is desirable to know on account of a case of poisoning. We do not know of the plant by this name. It seems allied to Phaseolus lunatus.

ABELIA RUPESTRIS.—A correspondent kindly notes that in the article on "Abelia rupertris" at p. 323, there is a typographical error, rupestris having been three times repeated rupertris. It is remarkable that the proof reader made the three-fold error.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

PROCEEDINGS OF THE SECOND CONVENTION OF AMERICAN FLORISTS.—This is a very valuable document, and will certainly be of great service to the members of the Society for whom it is printed. So many persons expressed regret that we were not able to get Mr. Hendrick's reply to to the welcome at Mr. Childs' which we hoped to have together in our November number, that we give it here from these proceedings,—it will make our account of that part of the pleasant occasion complete:

"Mr. James Hendrick, of Albany, New York, responded on behalf of the guests. He said:

"Mr. Childs: I appear before you, sir, to thank you from the bottom of my heart for the kindness with which you have received us this day, and to assure you of our sincere appreciation of your hospitality in inviting us to be present on these grounds.

"It was the royal prophet of a peculiar people who cried out with his prophetic voice and repeated in ecstacies of joy, 'Unto us a child is born—unto us a son is given.' May I not, without irreverence, on behalf of the American Florists, exclaim to-day, 'Unto us a CHILD is born,' and his name is George William? Am I not right in thinking that this 'Child' has so grown that his name and his fame have become household words, not only in Bryn Mawr and in Philadelphia, but in all the United States? Am I not right in saying that wherever poverty was present he never closed his hand? Am I not right in declaring that when victory perched upon the banners of the great captain of our armies, there was no man in the United States so near to him as was George W. Childs? [Three rounds of cheers for Mr. Childs were here given with great cordiality.] Am I not right in asserting that when a gloomy cloud appeared upon the horizon of that great captain's life and he seemed appalled under the load imposed upon him, and when false friends sought to pull him down, George W. Childs assured him, 'I am here at your back?' [Applause.] Then, gentlemen, if I am right in my thoughts and utterances, it follows that you are to-day associated with a man whose personal record is as honorable as that of any man whom I can name. ['Our next President' and long-continued cheers.]

"Whether he be President or not, he lives in the esteem of every patriot, he lives in the affection of every good-minded man in the community. [Applause.]

"Let me say to you, Mr. Childs, that you have done well in extending your invitation to the American florists. We belong, sir, to a very ancient tribe. My good friend there (Mr. Meehan) spoke about the woman who made the first garland. Does he not know that the only business on this earth which is of Divine origin is that which God created when He commissioned man to superintend the garden which He Himself had planted? Does he not remember that we, as earth's artists, had been commissioned by God for His own work, and that we were not to beautify the lily, nor to paint the rose, nor to tint nature with unnatural crimson, but that, having given us brains, He works through us and makes this garden of ours like a paradise?

"My friends, if I am right in the few remarks I have made, we are entitled to feel that this gentleman, in the hospitality he has extended to us, has by his association with us made us better men. In going hence from Wootton, this place at one time a corn-field, but now so beautified by art that it presents a scene of beauty which, in my judgment, is unequalled, let us go from it pledging ourselves and pledging each other that we shall be better men and better women and better citizens, and have a more friendly regard for our entire race. Gentlemen, on your behalf I have said these few words. Here is the man (indicating Mr. Childs) to whom your thanks are due. His spokesman has spoken well. Let us wish that our host, when his work is done, when the earth is vanishing from his sight, when he is called up before that great, high throne, the welcome will be given him, 'Here is the Child who has been a source of great comfort and blessing to many a man.' [The speaker here retired amid a chorus of cheers, which seemed to rustle the leaves of the trees overhead.]

"Mr. Meehan here announced: Ladies and Gentlemen: Mr. Childs, overwhelmed by the cordiality of your greeting, desires me to say that he will be pleased to shake hands with you, if you will pass by him in this direction. I hope you will accord him that gratification."

PENN. HORTICULTURAL SOCIETY.—At the annual meeting of the Pennsylvania Horticultural Society the following officers were elected: President, J. E. Mitchell; Vice-Presidents, Caleb Cope, Isaac C. Price, Geo. W. Earl, Robert Craig; Corresponding Secretary, Thomas Meehan; Recording Secretary, Edwin Lonsdale; Treasurer, W. F. Dreer; Prof. Botany, Dr. Charles Schaffer; Prof. Horticultural Chemistry, James C. Booth; Prof. of Entomoloy, S. S. Rathvon.

Mr. Lonsdale, the successor of the late Secretary Harrison, was elected by the large vote of 86 out of 97 cast. He was also recently elected

Secretary of the American Society of American Florists—all the other nominees withdrawing in his favor.

Mr. Lonsdale is an educated gardener, having had the advantage of regular tuition under Stephen Taplin, who had charge of the celebrated gardens of the Earl of Stamford at Enville Park, Staffordshire. In 1879 he came to America, and soon after was recommended by Mr. James Taplin to Mr. Meehan, of Germantown, as foreman of the greenhouses, in which capacity he was engaged acceptably for several years, then returning to England to close out some business affairs. Returning on a re-engagement, he had charge with Mr. Meehan several years, till a desire overcame him to try his fortune in the Golden State. An opportunity occurring to buy out a florist's establishment in Germantown, led him to leave the Pacific. In 1880, in connection with his brother-in-law, the firm of Lonsdale & Burton was founded at Wyndmoor, Chestnut Hill, Philadelphia, a florist's establishment which has taken a leading part in the Philadelphia business, besides obtaining in some particulars, and in rose growing especially, a national reputation.

Outside of the membership of the society, and wherever the intelligence and excellent personal qualities of Mr. Lonsdale are known, he receives many congratulations on his succession to this responsible office in this time-honored society.

State Horticultural Association of Pennsylvania.—The annual meeting of the Pennsylvania State Association will be held at Bethlehem, Pa., January 19th and 20th, 1887. The usual excursion rates will be granted by the Philadelphia and Reading, and Pennsylvania Railroads, and further particulars will be furnished upon application to E. B. Engle, Secretary, Waynesboro, Pa.

These meetings are always interesting and attended by some of the most intelligent horticulturists in the State. In the history of the society two meetings have already been held at Bethlehem, and both were among the most profitable and pleasant ever held.

The Forthcoming Meeting of the American Pomological Society.—Though the date of the meeting has not yet been fixed, the Boston people are getting ready for a grand old time. Col. Wilder writes: "That the Massachusetts Horticultural Society has appropriated five hundred dollars to be awarded in complimentary prizes to exhibitors of the American Pomological Society at its next meeting in September. Open to the whole country. These are in addition to the Wilder Medals which will be awarded as usual; what we anticipate will produce a remarkable exhibition from different parts of our wide spread country, and to accommodate which we have secured the great hall of the Mechanics Association with more in capacity than our own."

Western New York Horticultural Society.—We have an impression that this is the oldest of these very useful State societies, as it certainly is one of the most useful and well-attended. This is its 32nd annual meeting, and will be held this year at Rochester, on the 26th of January. There are to be a number of interesting papers read. Professor Goff will talk on the newly discovered Potato sketches, which are said to be fully equal to charcoal sketches or sketches in chalk. For the benefit of market fruit growers, J. J. Thomas will discourse on the future of the business. Mr. Chas. A. Green, of the *Fruit Grower*, and Prof. Sturtevant will tell of what is new in small fruit culture; and Mr. Butler, Editor of the *Vineyardist*, of the grape. Flower-lovers will have an essay on the Rose, by Mr. D. M. Dunning, the well known rose lover of Auburn, whose love for the plant has, no doubt, extracted from the Queen of flowers secrets that she does not tell to all. The important subject of Aphis on the Cherry will have consideration from Mr. Charles Little.

Germantown (Pa.) Horticultural Society.—At the annual meeting, Mr. B. H. Shoemaker was elected President, Messrs. Jonathan Jones, Charles J. Wister and James Barrows, Vice-Presidents; Joseph Meehan, Treasurer, and Thomas B. Meehan, Secretary, in place of Edwin Lonsdale, resigned, to occupy the same position in the Pennsylvania Horticultural Society. The finances were shown to be in a very healthy condition. A feature in this Society is a Committee on Botany and instruction, appointed by the President, and the chairman of this Committee gives an off-hand lecture at every monthly meeting on topics suggested by the plants, fruits and vegetables exhibited. No charge is made for admission at the monthly meetings, and they are attended by hundreds of the best citizens, and in this way a widespread influence in favor of horticulture is exercised through the community.

The American Exhibition in London.—Seedsmen, Nurserymen and Horticulturists generally, should not forget the great exhibition that is to be held in London, commencing May the next, exclusively for the products of the United States. The immense interest taken in Canadian products at the recent Colonial Exhibition, shows what will be the reception given to the more varied products of the United States. England is not a large buyer of American products, except in food articles, which she has not area enough to produce for her large population,—but we believe she would be if what we have to offer are made better known.

Mr. Burnett Landreth, of Philadelphia, is Director for the United States, and any information desired may be had from him.

THE GARDENERS' MONTHLY AND HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXIX. FEBRUARY, 1887. NUMBER 338.

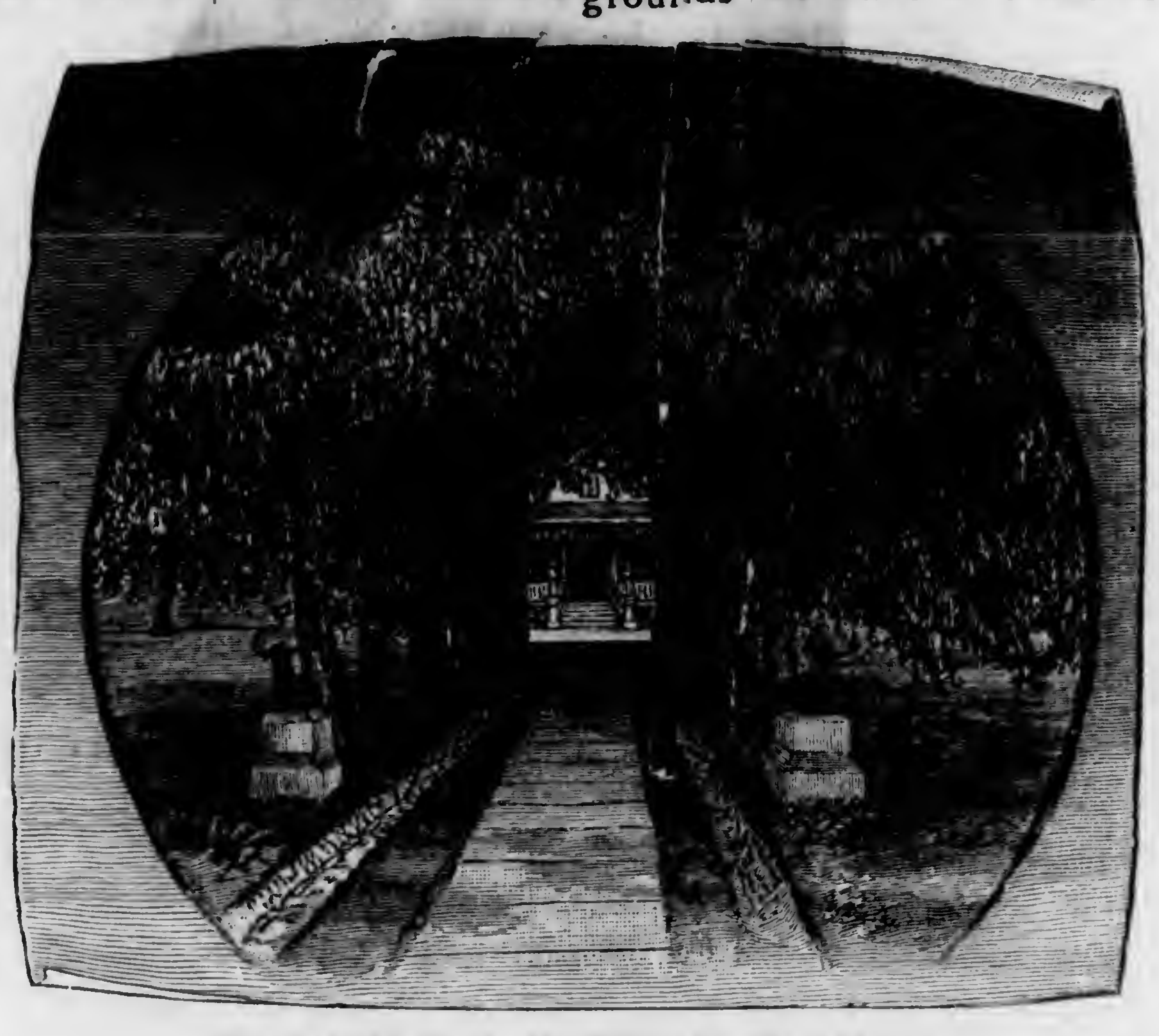
FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

We are glad to find that our efforts to direct attention to the beautiful but much neglected art of landscape gardening, are meeting with considerable success. Much more attention is being given to having country homes outside of great cities than a few years since, and double the pleasure can be had from them when everything in their surrounding is tastefully arranged, than when things are simply "set out" and left to run in a hap-hazard sort of way. We have recently given home views of country seats, illustrative of special points in landscape gardening. To-day we present views of the grounds of Mr. J. M. Tilford, of White Plains, New York, showing the admirable effects of straight avenues of trees, and the more artificial features in garden art.

There was a time when everything in gardening was more or less directed in straight lines or squares. With the introduction of a taste for curved lines as being more "natural," there was such a reaction against "Dutch" gardening that no good gardener dare talk of a straight line. One of the earliest contributions to horticultural literature by the writer of these lines, was a defense of straight lines, in the early issues of Downing's *Horticulturist*. This paper, now nearly forty years ago, met the approval of that great landscape artist, and did a little to stem the tide setting in against the use of straight lines in many cases.

In Mr. Tilford's grounds we have a beautiful



Shaded Walk, J. M. Tilford's Residence.

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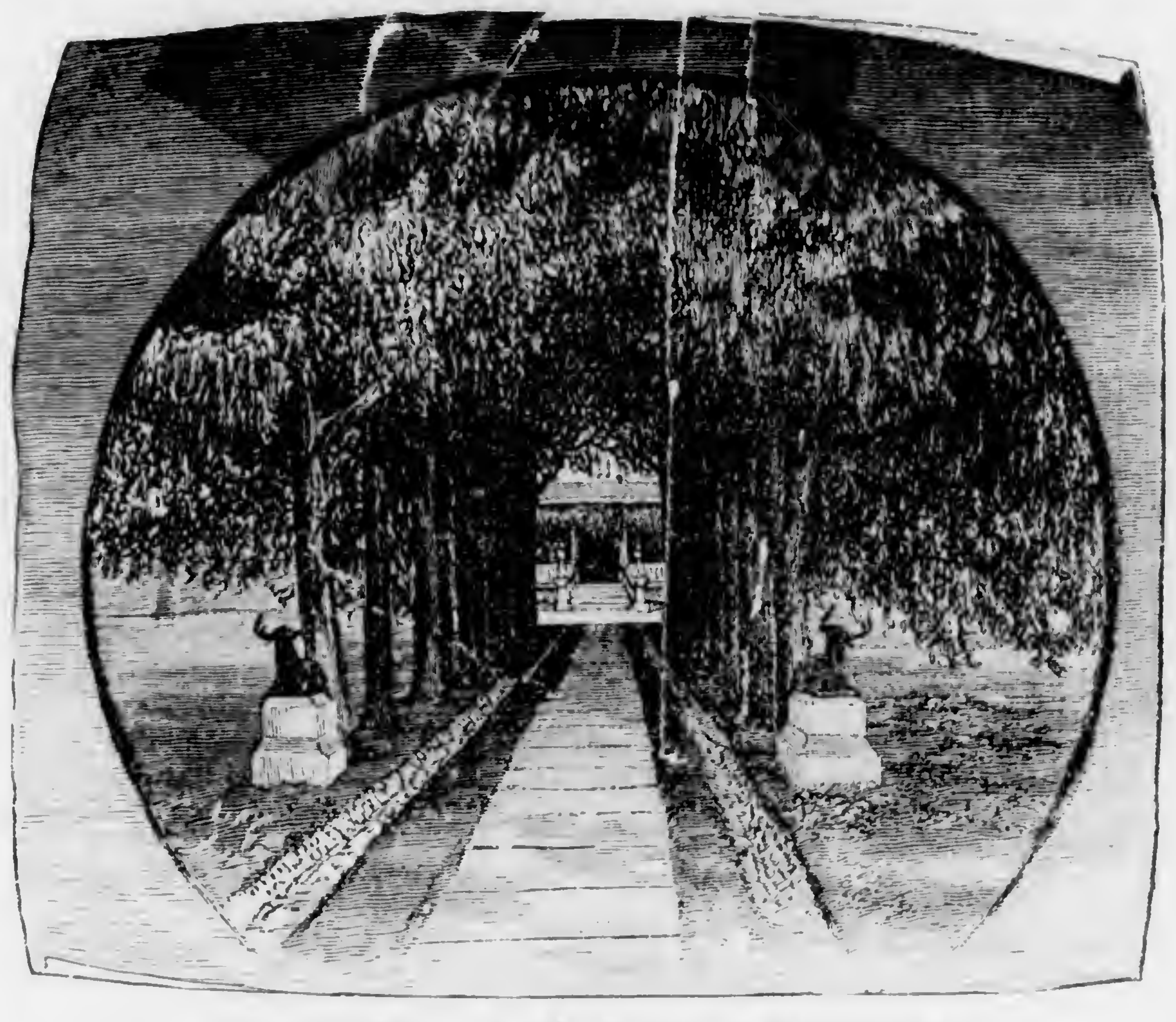
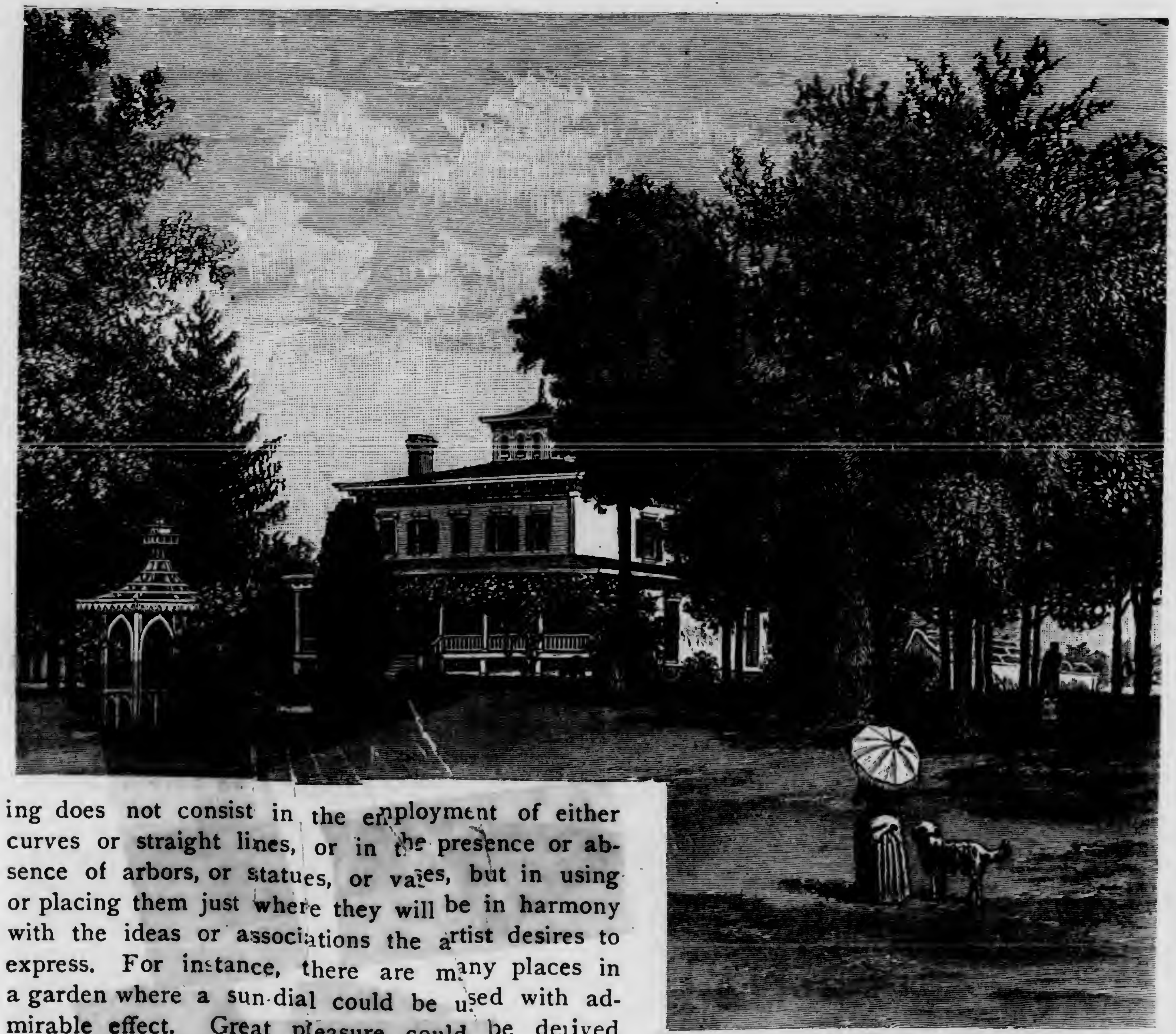


Shaded Walk, J. M. Tilford's Residence.

INTENTIONAL SECOND EXPOSURE

avenue, shaded by elms, which, as it has a good object at the end, is singularly effective. One of the leading features of these grounds is the good use of the artificial in connection with the natural. Summer houses, arbors, statues and rustic seats abound. Indeed, true art in landscape gardening does not consist in the employment of either curves or straight lines, or in the presence or absence of arbors, or statues, or vases, but in using or placing them just where they will be in harmony with the ideas or associations the artist desires to express. For instance, there are many places in a garden where a sun-dial could be used with admirable effect. Great pleasure could be derived from placing one properly. But if we come on one set in the deep recesses of a shady wood, or in a cave, the unappropriateness excites ridicule, rather than a sensation of the agreeable. We should feel rather in a lunatic asylum than on the grounds of one with whom we might share a feast of pleasure.



Residence of J. M. Tilford, White Plains, N. Y.

Arbors and summer houses can often be made of rustic material at little cost, and will be more appropriate to the surroundings than if made of more artificial material. We give on page 36 (Fig. 1) a half section of an octagonal building, so made. The bark should be taken off and the material painted of the same color as the wood, in order to preserve its rustic appearance.

In making these houses it must be remembered that they are to serve as retreats during hot weather, and therefore coolness is a first consideration. A good non-conducting material should be used for this. There is nothing better than straw,—or, as the folks in the old country would say, a thatched roof. We give an illustration of one of these. (See Fig. 2, page 37.)

In our country we should prefer the eaves to be longer than given here, as the projection is a better aid to coolness, in keeping out the direct rays of the sun. In fact, the chief distinction between an American and an English summer house might be said to be that in the one coolness and shade were the prominent features, against the mere resting places of the Old World.

COMMUNICATIONS.

WHAT I WOULD DO IN TREE PLANTING.

BY D. S. GRIMES.

If trees, fruits and flowers were in any way a benefit or pleasure to my family and my friends—of any value to my property or my country—I would plant and cultivate them.

If a knowledge of the adaptation of trees and plants to climate and soil, of selecting, planting and cultivating, was essential to success in growing trees and plants, I would obtain that knowledge.

If I were the owner of but a single town lot, however small it might be, I would clear out the cast-away fruit cans from the back yard and plant fruit. I would plant trees to make my home attractive and comfortable.

If I wanted to sell or rent my property to the best advantage, I would plant and grow an illustrated advertisement of trees on that property.

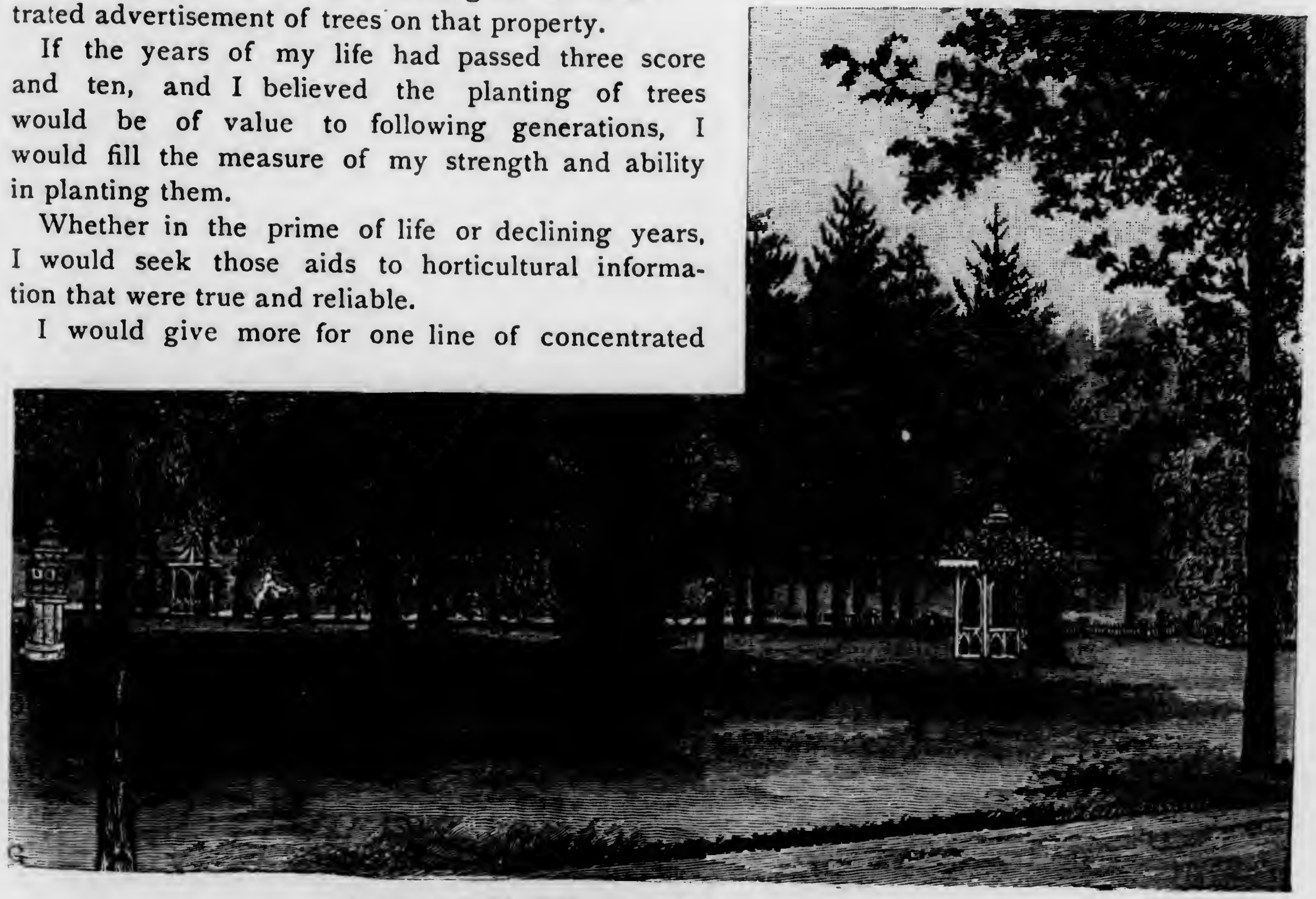
If the years of my life had passed three score and ten, and I believed the planting of trees would be of value to following generations, I would fill the measure of my strength and ability in planting them.

Whether in the prime of life or declining years, I would seek those aids to horticultural information that were true and reliable.

I would give more for one line of concentrated truth, from a practical man, on tree culture, than for a whole volume of exaggerated nonsense from the lie-brass of a dishonest and sensational "tree agent."

Prices, quality and risks being equal, whether of the products of the soil, the manufactory, the mercantile interests, or of any honorable profession, industry or enterprise, I would patronize that locality or state in which I was the most interested.

Denver, Colorado.



Lawn at J. M. Tilford's Residence. (See page 34.)

PYRUS SPECTABILIS, PARKMANI, AND CHINESE WEEPING LILAC.

BY F. L. TEMPLE.

It is a pleasure to talk with the readers of the MONTHLY—when you have something to say. Two new trees have come to us, which prove to be such valuable additions to our list of choice ornamentals, that I take great pleasure in presenting them to our horticulturists.

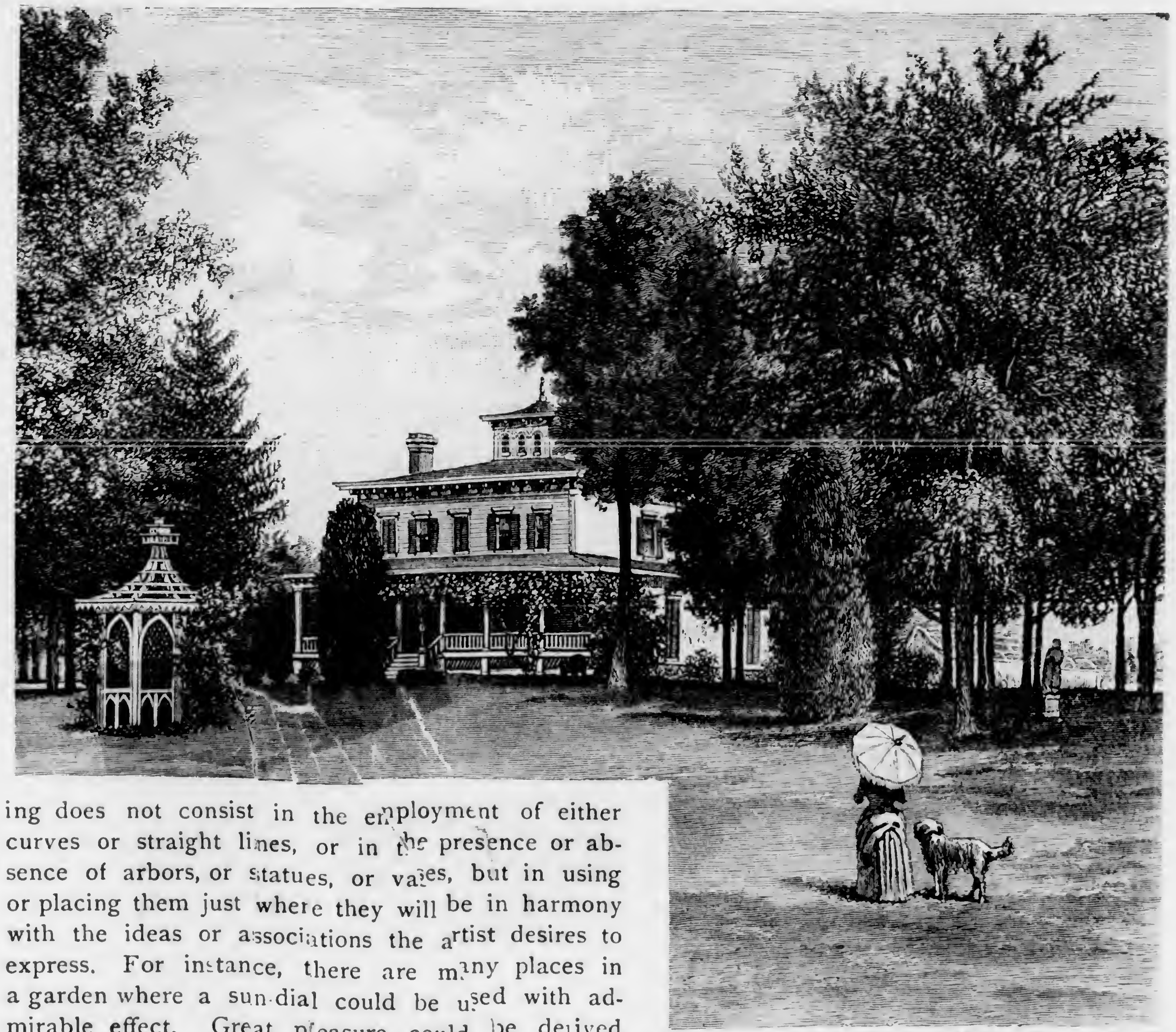
I will first state that they are both perfectly hardy at Boston. "Pyrus Malus Parkmanii" is, probably, a variety of P. M. spectabilis, which originated in Japan, and was brought to this country by the late President Clark of Amherst Ag. College. Two plants only were received, and one died, while the other had a lingering existence for some years, when it rallied and shone forth with the most beautiful blossoms and buds ever seen on a flowering apple, and its value has been fully acknowledged here for several years past.

avenue, shaded by elms, which, as it has a good object at the end, is singularly effective. One of the leading features of these grounds is the good use of the artificial in connection with the natural. Summer houses, arbors, statues and rustic seats abound. Indeed, true art in landscape gardening does not consist in the employment of either curves or straight lines, or in the presence or absence of arbors, or statues, or vases, but in using or placing them just where they will be in harmony with the ideas or associations the artist desires to express. For instance, there are many places in a garden where a sun-dial could be used with admirable effect. Great pleasure could be derived from placing one properly. But if we come on one set in the deep recesses of a shady wood, or in a cave, the unappropriateness excites ridicule, rather than a sensation of the agreeable. We should feel rather in a lunatic asylum than on the grounds of one with whom we might share a feast of pleasure.

Arbors and summer houses can often be made of rustic material at little cost, and will be more appropriate to the surroundings than if made of more artificial material. We give on page 36 (Fig. 1) a half section of an octagonal building, so made. The bark should be taken off and the material painted of the same color as the wood, in order to preserve its rustic appearance.

In making these houses it must be remembered that they are to serve as retreats during hot weather, and therefore coolness is a first consideration. A good non-conducting material should be used for this. There is nothing better than straw,—or, as the folks in the old country would say, a thatched roof. We give an illustration of one of these. (See Fig. 2, page 37.)

In our country we should prefer the eaves to be longer than given here, as the projection is a better aid to coolness, in keeping out the direct rays of the sun. In fact, the chief distinction between an American and an English summer house might be said to be that in the one coolness and shade were the prominent features, against the mere resting places of the Old World.



Residence of J. M. Tilford, White Plains, N. Y.

COMMUNICATIONS.

WHAT I WOULD DO IN TREE PLANTING.

BY D. S. GRIMES.

If trees, fruits and flowers were in any way a benefit or pleasure to my family and my friends—of any value to my property or my country—I would plant and cultivate them.

If a knowledge of the adaptation of trees and plants to climate and soil, of selecting, planting and cultivating, was essential to success in growing trees and plants, I would obtain that knowledge.

If I were the owner of but a single town lot, however small it might be, I would clear out the cast-away fruit cans from the back yard and plant fruit. I would plant trees to make my home attractive and comfortable.

If I wanted to sell or rent my property to the best advantage, I would plant and grow an illustrated advertisement of trees on that property.

If the years of my life had passed three score and ten, and I believed the planting of trees would be of value to following generations, I would fill the measure of my strength and ability in planting them.

Whether in the prime of life or declining years, I would seek those aids to horticultural information that were true and reliable.

I would give more for one line of concentrated truth, from a practical man, on tree culture, than for a whole volume of exaggerated nonsense from the lie-brass of a dishonest and sensational "tree agent."

Prices, quality and risks being equal, whether of the products of the soil, the manufactory, the mercantile interests, or of any honorable profession, industry or enterprise, I would patronize that locality or state in which I was the most interested.

Denver, Colorado.

PYRUS SPECTABILIS, PARKMANI, AND CHINESE WEEPING LILAC.

BY F. L. TEMPLE.

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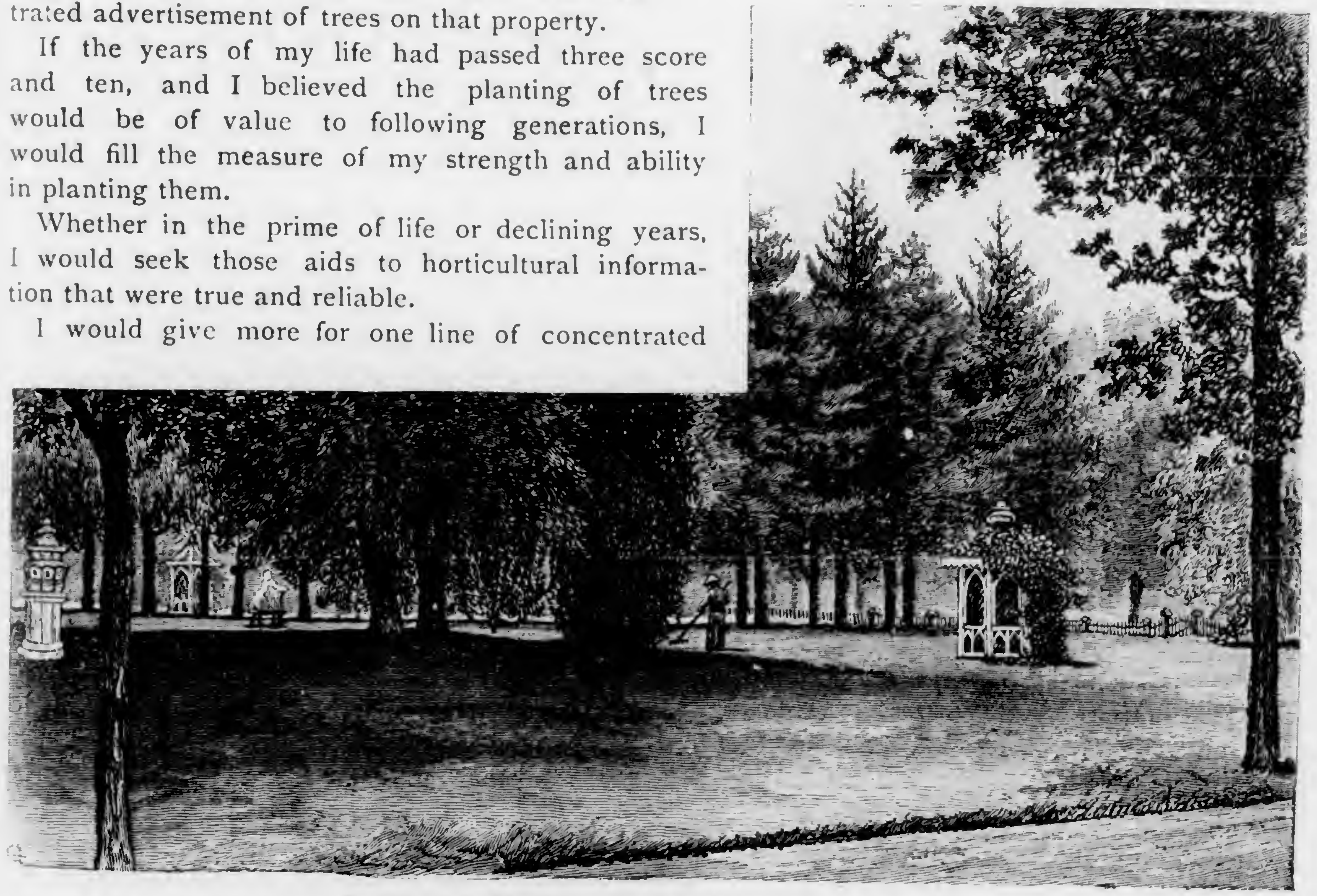


Lawn at J. M. Tilford's Residence. (See page 34.)

INTENTIONAL SECOND EXPOSURE

It is a small-sized, slender-branched tree, with a thick top, and its leaves are remarkably firm, coriaceous, and glossy, cuneate in shape, and so distinct in appearance from any other trees of this family that it can be recognized at a distance as easily as a Rhododendron, while the autumn colors of the foliage are equal to those of the Liquidambar or any other tree we have.

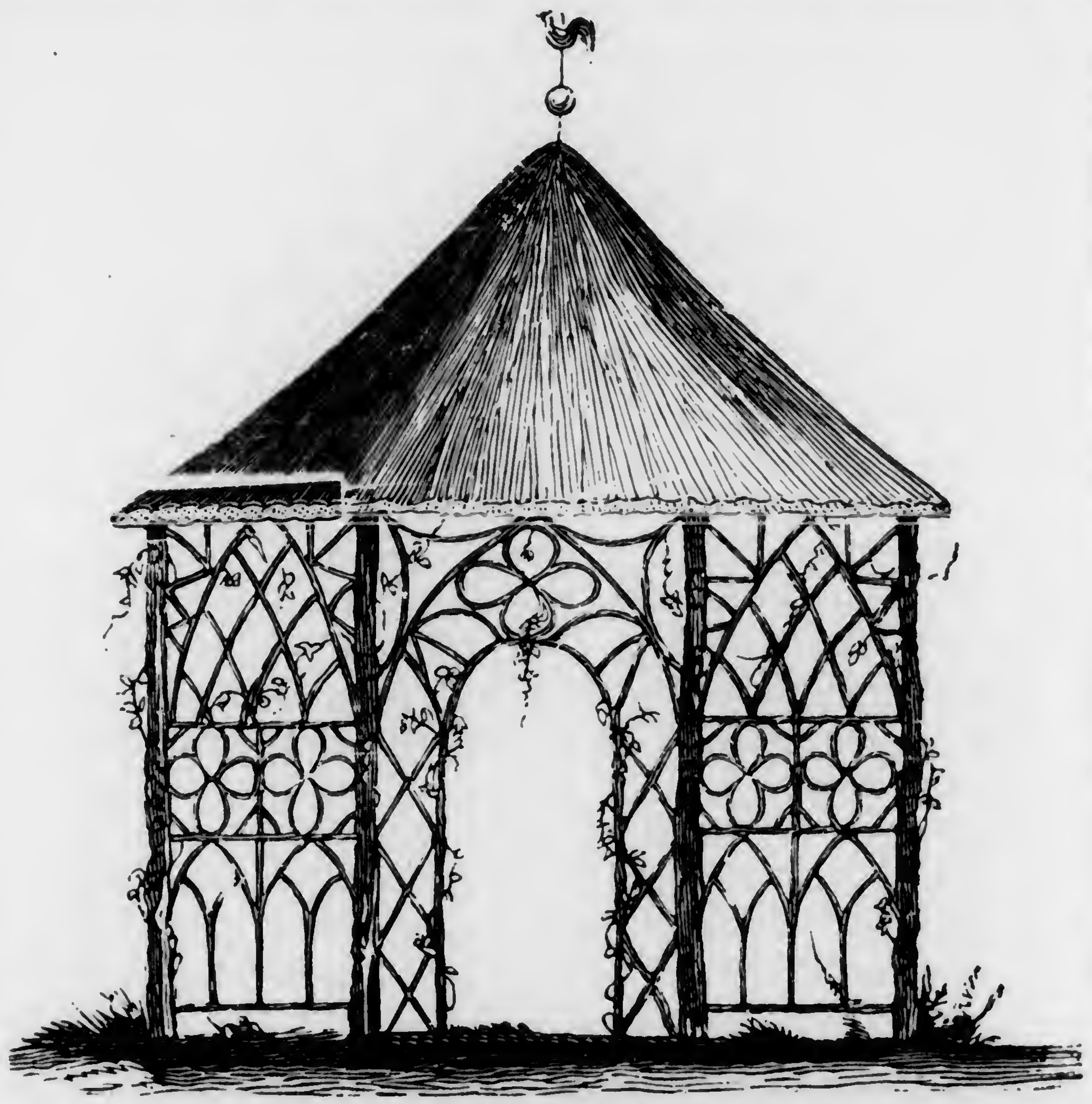


FIG. I. SEE HINTS, PAGE 34.

The beauty of its foliage alone would entitle it to a place of honor on any lawn, but when its buds appear in May its surpassing loveliness is enthusiastically acknowledged by all who see it. The stems of the blossoms are three inches long, and so slender that the weight of its carmine buds, an inch in length, bends them down into a graceful curve, which adds greatly to the whole effect. The open flowers are a lighter shade of carmine, and are as double as an average tea rose.

Those who have seen the tea rose "Pere Gontier" may be told that its buds are fac-similes of those of that fine new rose, both in shape and color, though, of course, not so large. Any person seeing these long and elegant buds of carmine would suppose they were tea rose buds, and nothing else. I showed them last May to many amateurs, and all were so warm in their admiration that I felt I could not over-praise it myself.

The second new one is "Syringa ligustrina Pekinensis," variety Pendula. It is a lilac having foliage, in shape, like that of the laurel willow, and, probably, white flowers, although it has not yet flowered in this country. Its habit is almost precisely like that of Forsythia suspensa; while, grafted high on a standard, it forms a more graceful tree than the Kilmarnock Willow. It is the first "Weeping" lilac ever seen, I think, and will be the parent of a new type of this family, no doubt.

Somerville, Mass.

FREEZING OF TUBEROSE BULBS.

BY JAMES M. LAMB.

In your October number I find an article headed, "Tuberose bulbs flowering after hard freezing." I think this heading is misleading; so I give my experience. Some years since I had just such a state of affairs as Mrs. Thomson describes. I had packed my sets and small bulbs in barrels, and covered the barrels with hay. But we had an unusually cold snap, and my bulbs were frozen,—so I thought. I found, however, in spring on examining my barrels that only about 6 inches around the sides, top, and bottom of the barrels, was frozen, and a small space in the middle of each barrel was perfectly safe and, I am satisfied, was not reached by the frost at all; the outside, that first froze, protecting the inside of the barrel, on the same principle as 6 inches of earth piled around a bank of sweet potatoes will protect them from frost. After an experience of fourteen years in growing Tuberose bulbs I am persuaded that an actual freeze will destroy both flower-germ and bulb. But I know that small bulbs left in the ground over winter, where the ground froze say 2 inches, have bloomed for me as well as if taken up and kept in the greenhouse, and that of 60,000 small bulbs left in the ground when it froze 6 inches last year, not one ever showed a leaf. Now, Mr. Editor, I hesitated to speak of your comments on Mrs. Thomson's article, but as you infer you wish facts I give them as I see them. First you say, if a bulb is dug in the fall before it is inclined to rest naturally, the embryo flower is not formed and will consequently not bloom in the spring when planted.

My observation leads me to say that there is no natural rest for a growing Tuberose bulb but the perfection of its flowers. The taking up and drying of bulbs in the fall, or their growth being stopped before blooming, by frost, is not a natural rest. We have to dig our earliest plantings the latter part of September to keep them from flowering. Secondly, that a half-grown bulb dug in the fall, kept from frost and planted in spring will flower when it attains its full growth, which it does here the latter part of August and in September.

My observation further leads me to say, that a full grown bulb needs more care in the winter than a half-grown one or a small set, for this reason: In all the embryonic flower is present, but in the small ones so far down in the solid part of the bulb as to be very much protected; in the fully developed bulb the embryonic flower has come up in the neck of the bulb where it is easily affected by cold, and if once touched it will not flower, but decay. Hence I find full grown bulbs that I know would flower next year, if left in the ground here, make nothing but tares. While half-grown bulbs left in the same ground will keep on growing next year and bloom when fully grown.

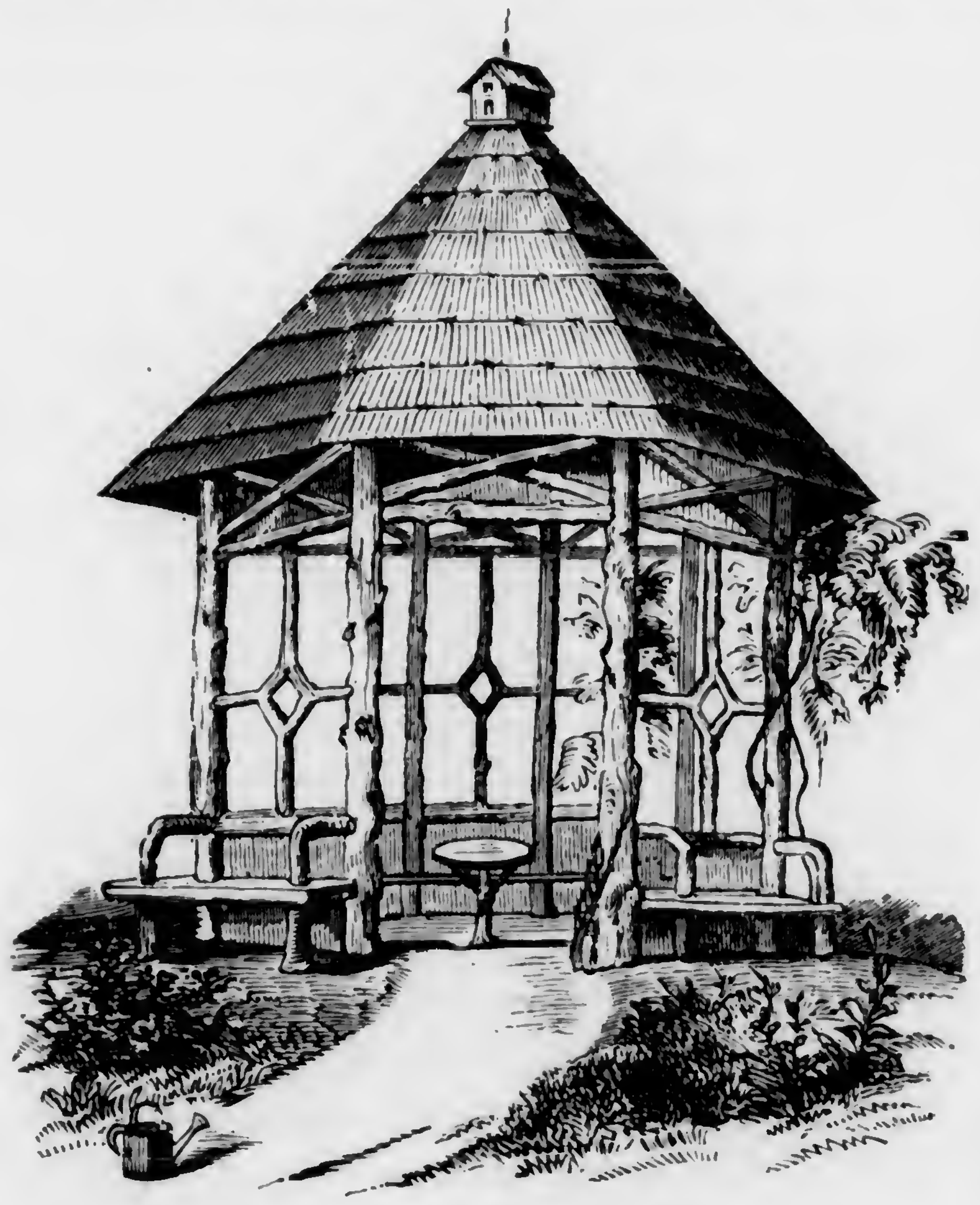


FIG. 2. SEE HINTS, PAGE 34.

One great difficulty in growing Tuberoses for bloom, by florists and others, is to get bulbs with the flower buds too far advanced, or just ready to bloom before being dug. Such bulbs are liable to be injured by very little cold and are consequently worse than useless.

Fayetteville, N. C.

EDITORIAL NOTES.

A YELLOW QUEEN MARGARET.—It is said that a China aster with pale yellow flowers, has appeared in France.

SOWING SWEET PEAS.—A correspondent of *Gardening World* says: "I am decidedly of opinion that Sweet Peas are sown much too thickly. When visiting Mr. Eckford at Boreatton, three years ago, I found that he adopted the practice of sowing his new Sweet Peas singly, with the result that they made large bushy plants, and flowered both freely and finely. I was forcibly struck with the size the plants made, and what a great space an individual specimen filled. As a general rule, Sweet Peas are sown much too thickly, and often in poor ground that has not been stirred deeply, and the result is they flower and then seem to decay; they are too crowded and the soil does not sustain them as it should do. Let them dig deeply and well manure the ground, and then sow thinly, so that each plant may have free room in which to develop. Let them pick off the blossoms as they decay, and they will be rewarded by a vigorous and healthy growth and a continuity of bloom that will surprise them."

HEPATICA.—Some of our native plants are objects of enthusiastic culture in the Old World. A correspondent of the *Gardeners' Chronicle*, thus talks of the Hepatica:

"In his book on 'Alpine Flowers,' Mr. W. Robinson remarks: 'To add perfume to the Violet, paint the Lily, or gild the yellow Crocus, would seem to be no more wasteful excess than to praise this exquisite little flower. There is a cheerfulness and a courage about it on warm, sunny borders in spring which no other flower possesses; they are hardy everywhere, are not fastidious as to soil, though they love a deep loam, and present a charming diversity.' I like the idea of attributing to this flower the quality of courage. It was the only one in my garden, excepting the Snowdrop, that during the bitter weather dared to unfold its blossoms. It seemed as if, having a duty to perform, it was undeterred by the frosty influences that kept other things from displaying their floral charms. Now that the genial open weather has come with gleams of sunshine, all the more welcome because they have been seen and felt so little of late, clumps of the single blue and double red Hepaticas, under a wall having a west aspect, are just now most attractive, and I notice that in regard to the former they seem to vary both in the size and coloring of the flowers. Some are much darker and larger than others, but it may be this is but an accidental result. The clumps are large and were planted about two years ago in some good loam. It is a very hot and dry position during the summer, but during the trying time of the prolonged hot weather of last year the plants were top-dressed with soil, and a covering of cocoa fibre added—soap-suds being freely given also. I find the colors of the flowers grown in the open air are much better than those grown in pots in a cold frame.

"In the cold frame the differences of color between the double blue and the single purple, through the varieties of the angulosa type down to one of the latter named cœrulea, is remarkable. The double blue is a true blue, and the single purple is of a distinct blue-purple shade. H. angulosa lævigata has a tint of purplish azure-blue—peculiarly its own; then there is a descent to tints that are so delicate as to be termed silver-blue or gray-blue. Under the name of single red I have two or three distinct types—perhaps they are seminal varieties, some dark, some paler, some with broad, others with narrow petals, but all are very charming. The most delicate tints are very pleasing, the richer and deeper hues very bright and effective. To grow these plants in pots successfully during the summer of 1885 and the winter of 1886 was no easy task. For many days during February and March they were frozen hard, but by dint of keeping them fairly dry, and assisted by a bed of cocoa fibre and leaves, not a pot was broken by the frost and scarcely a plant out of some sixty lost."

SCRAPS AND QUERIES.

Wistarias.—A correspondent inquires for "a list of Wisterias." In the first place, they are Wistaria, not Wisteria, having been so named by Nuttall when he decided to separate the genus from Glycine, after Dr. Caspar Wistar, of Philadelphia. There are no great number of species. The Chinese have three forms, the common blue, the pure white, and the double. These are all strong growers. Of the American there are two forms, the regular American Wistaria, W. frutescens, and the W. magnifica, which is a more vigorous variety. These are all.

Acæna microphylla, p. 23.—Mr. Falconer says: "Perhaps George Woolson, of Passaic, N. J., has it in stock. If not, English firms, as Backhouse of York, Geo. Paul of Cheshunt, or Ware of Tottenham, no doubt can supply it. It is usually propagated by division; where it grows freely this is an easy and quick method. It is a real pretty, moss-carpet-like plant, a little dense trailer whose chief horticultural value consists in its multitude of crimson spines, that give a glowing hue to the whole plant. Its flowers are small and inconspicuous. It is a native of New Zealand, a good deal used in Alpine or rock gardens in Europe, but seldom cultivated in America. I have grown it quite successfully in a cold frame, but lost it when planted in the out-door rockery."

A Fine Cedar of Lebanon.—Chas. E. Parnell, Queen's, L. I., N. Y., writes: "I have noticed in the Monthly at various intervals, notes on specimens of rare or remarkable trees, and especially on the Cedar of Lebanon. I do not recollect the fact ever being mentioned of its producing cones, so I do not know whether it is a common occurrence or not. This season I noticed a quantity on the tree we have here. It is the first time it ever produced cones. For notes on the tree of ours, see Henderson's 'Handbook of Plants,' p. 41."

[In the vicinity of Philadelphia, the Cedar of Lebanon has produced cones for many years past, but fine specimens are not numerous. It is remarkable that this beautiful and historic tree should be so scarce.—Ed. G. M.]

Pruning a Transplanted Elm.—J. N. J. writes: "In the last week of last October, I transplanted to my place on the shore of Buzzard's Bay, Mass., an elm tree 25 feet high and 5 inches in the butt. It was carried on a man's back a quarter of a mile from where it had been transplanted two years before, and I got three of its main roots with all their fibres, the fourth root I had to cut off, not being allowed to take down a superincumbent wall. The tree is now situated 150 feet from the salt water, in a very successful district for elms, but liable to strong S. W. breezes. I did not top or set back the tree at all, and it now has a beautiful head, with fine, vigorous looking small boughs, all of which I want to preserve, and my question is, must I head the tree, or set it back? And if absolutely necessary, how much, and when? The tree was well guyed for the winter, with a capable man to look after the guys, which I suppose had better be removed in April. I will be much obliged if you will answer in next number of Gardeners' Monthly, which I constantly read; and if you can spare the time to give any additional information, I will feel still more indebted."

[A tree so recently moved before the last transplanting, will not need any pruning or heading back, unless it should show any disinclination to push out leaves in the spring; in which case it should be pruned back as soon as possible after it is discovered that the buds are late in pushing their leaves. Just how much cutting back will depend on how reluctant it may seem. The greater the apparent reluctance, the more severe the pruning.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

HER MAJESTY ROSE.

BY PETER HENDERSON.

I notice that your correspondent, Mansfield Milton, like hundreds of others, is in bad humor with "Her Majesty," but no one here is to blame. Mr. Evans purchased the stock from Mr. Bennett in 1884, and if it was then in the same condition as I saw it on Mr. Bennett's grounds in England in 1885, he certainly was not to blame for giving it the extraordinary praise with which it was heralded, for, with all my long experience in such matters, its merits as seen there so impressed me that I did not wait to come home, but ordered from London direct one thousand plants from Robert Craig. This was my judgment in the matter, mistaken as it proved to be. In all Mr. Bennett's stock of some 10,000 plants, I did not see a speck of mildew on "Her Majesty," and although the weather was hot and dry the flowers shown were all that had been claimed for them. But it is evident "Her Majesty" will never reign in this democratic soil. She not alone besmears herself with mildew in a way that no other Rose ever did, but she seems absolutely to refuse to show her regal claim to beauty unless under the very best conditions. In the thousand plants that I got from Mr. Craig, only some five showed flower out of the whole lot. Almost any other Rose from such plants would have given 100 per cent. in flowers. And she don't seem to "acclimatize" either. Fine plants grown here, though fairly free from mildew, show the same shyness in blooming, so that "Her Majesty's" reign, in America at least, may be said to be completely over. But we should not complain of being "bit" now and then, when it can be shown, as in this case, that it is not done to deceive, particularly when we know that in the William Francis Bennett Rose, sent out by the same raiser, we have a set-off that well balances the disappointment in "Her Majesty," for our experience with the Bennett last winter, and up to the present time this winter, shows it to be by all odds the most profitable of all Roses grown for cut flowers in winter.

Jersey City Heights, N. J., Jan. 5, 1887.

NOTES ON ORCHIDS, AT THE BOTANIC GARDENS, WASHINGTON.

BY M. H. F. LESTER.

It appears to me that some one or other in the neighborhood of the Botanic Gardens at Washington has about come to the conclusion that Orchids have some value and beauty. Some few years ago one could find nothing there of that description but a lot of trash, interesting only to botanists. I was surprised and delighted a day or so ago by a visit to the Orchid house there. Such beautiful bunches of Lælia anceps! At a little distance they look like the little blue birds one is in the habit of seeing in cages in bird stores, ready to fly in one's face almost. Cattleya Percivallianum in great variety. Plenty of C. Triana and C. Roezli looking fine, although not yet in bloom. Vanda suavis with six flowers open on a spike. Cypripedium Spicerianum had five blooms, each nearly as large as the pot containing the plant. Dendrobium biggibbum is a delightful Dendrobe, and very easily grown. D. leucolophytum is a chaste little flower, and lasts long in bloom. Cymbidium iridifolium is not a very showy flower, but the foliage is good, and the number of spikes it makes and the perfume it diffuses through the house, ought to secure it a place in every collection. And the lovely little Sophoronites grandiflora, with its dazzling flowers, no one can afford to be without, who has any pretensions to a collection of Orchids. The Orchid house appears to be in good hands, although there are no large specimens. The plants are clean and healthy if they are small.

December, 1886.

REMARKS ON THE CHRYSANTHEMUM.

BY A. VEITCH.

The Chrysanthemum show lately held in New York was a grand affair, and visitors could not fail to be both instructed and delighted with the number and variety of plants and flowers there displayed. Taken as a whole the exhibition was most creditable, and outside of all pecuniary considerations the exhibitors might well be satisfied with the unstinted praise bestowed upon them, both by the critical few and the general public.

Those who remember what the Chrysanthemum was forty years ago, and compare the few then in existence with the great number of varieties brought together on that and similar occasions, must be convinced that in the hands of intelligent cultivators it has been most accommodating to their wishes. And considering the state of perfection now reached it would be premature to predict very rapid improvement in the future. If we take the Dahlia as an example as to what is likely to prove true in this case, much improvement may yet be expected, but the chances are it will be slow in comparison to what it has been. There may be no end to the number of varieties produced, but the great bulk of them may fall short of a high standard of excellence. Some even now that are highly spoken of in catalogues are unworthy a place in any good collection. That this should be so is remarkable, seeing that in the several sections there are varieties which might be accepted as models in almost every particular. In the Chinese division we have Lady St. Clair, alias Empress of India, which although well out of her teens is more highly gifted with beautiful features than many of her juniors. In the same class we have Mrs. Mary Morgan and Mrs. George Rundell, both of which in form and delicacy of texture approach nearer to perfection than the most we have seen. In the Japanese section Golden Dragon is hardly surpassed in elegance of form, smoothness of petal, and beauty of color by any variety new or old; unless perhaps by Grandiflorum, which may have greater substance of petal and a more brilliant shade of color.

Of course we do not mean to convey the idea that all exertion should cease in endeavoring after new and more beautiful forms, but we do say that too many varieties have already found their way into the market which serve no other purpose than to swell the catalogues of salesmen. If means, therefore, could be devised to at least measurably prevent this in the future, much satisfaction would be felt by a large number of the patrons of this fine flower. But how to reach this object may not be easy, as any efforts made in this direction might be regarded as clashing with individual interests. Nevertheless, it seems within the scope of such a society as that of the American Florists to formulate and publish a standard embodying the chief elements of beauty in this flower, for the benefit of the members and of all whom it may concern. Such a criterion would be a guide for judges at exhibitions and helpful to those who interest themselves in raising varieties from seed.

The New York Horticultural Society have sets of rules by which to judge plants and cut flowers of the Chrysanthemum at exhibitions. In each case five properties are given as embracing the sum total of excellence, each of these representing a given number of points, in the aggregate 100. But as these rules apply to plants and flowers tabled for competition they are of comparatively little value in testing the merits of individual flowers under all circumstances. To more fully meet the case the following rules for estimating the points of excellence in flowers might be worthy of consideration: First, form; second, size and substance; third, smoothness; fourth, color; fifth, harmony—each of these representing five points, total 25—a sufficient number to test the merits of every flower which can come under consideration. Purity is an essential element of beauty, but as it may be regarded as the outgrowth of substance, smoothness and color, it is not overlooked in this enumeration.

It is admitted these rules do not apply alike to all the classes into which Chrysanthemums are grouped. Size must be ruled out in judging the Pompon varieties. Form, or rather the form most admired in the Chinese section, is different from that in the Japanese whose manifold methods of curvature and arrangement rejoice in a freedom which sets rigid rules at defiance. Nevertheless several of these rules apply to them as well as to others. As for the Anemone flowered varieties, it may be as well to leave them out for the present, as they seem to be in a rather active state of transition from the single to the double form. At least we have seen several with stray disc florets ligulate, and not a few that were perfectly double.

New Haven, Conn.

A GREENHOUSE BOILER.

BY E. HIPPARD.

For the benefit of brother florists and those using hot water or steam, I submit the experience and workings of a new boiler I had made for my new place, covering 12,000 square feet of glass. The boiler gives the best of results, and am quite confident that it will save a vast amount of fuel to all using it. I have no patent upon it, and do not intend to offer it to the trade, but any person wishing one can have it made by any boiler-maker for his own use.

My boiler is made of boiler iron, with a crown sheet ½-inch thick, through which are punched and threaded 288 2-inch holes, in which are

screwed 2-inch drop tubes made out of gas-pipe. The boiler is in two sections. Front section has 180 drop tubes, varying from 12 inches to 36 inches long. At back of these I have a water-back 6 inches thick and 36 inches high to crown sheet, in which are placed 15 4-inch flues, 6 inches long, then a space of 6 inches and another water-back, same thickness, but only 24 inches deep, with no flues. The fire and smoke pass through the 4-inch flues in the first water-back and against the smaller one, then descending below it, and passing in the second section of 108 drop tubes 24 inches long. In this section I have a door for admitting cold air, which ignites the carbon of soft coal or wood, and consumes the smoke, giving me a benefit of nearly half more heat from the fuel. To this door is attached a diaphragm to open and shut it. When more steam is needed it opens it and ignites the carbon as before-mentioned.

The size of boiler is 4 feet wide and 10 feet long. Its height from grate bars is 54 inches high; the grate surface is 54 inches by 36 inches. A fire can be placed under the second section by putting in grate bars, thus giving a grate surface of nearly 30 square feet, or 40 horse power. The boiler needs no cleaning, and can be used with any kind of fuel. I have filled it with cold rain water, and in 10 minutes I had 12 pounds of steam, with only 8 small shovels of coal. In ordinary weather it will keep steam from 3½ to 4 hours without any attention; using soft coal with hard coal it would last three times longer.

I commenced to fire October 12th, and until December 15th had used only one car of slack. Next year we will attach natural gas to it. I am using it at my city place, and think a great deal of it. When properly regulated by valves, it needs very little attention, running for weeks and months. If a break should occur, I have it so fixed that in one minute it can be removed, or coal fire built over burners. Some inventors say that drop tubes will rust very rapidly, because they are always full of water. Well, to those I wish to say that our water-works have the drop and horizontal tubes. However, the horizontal have been replaced, and the drop tubes are as good as when placed in many years ago; also our city fire engine drop tubes, and has them full of water 16 years, and are like new. The best protection to any kind of boiler is to have it full of water when not in use. Water and air cause rust, but a boiler full of water cannot have any air between the iron and water, consequently no rusting out. My boiler had been in use about 15 years before I bought it, and has always been full of water and has no rust, and is like new inside. No coloring at all.

Youngstown, Ohio.

ACINETA HUMBOLDTII.

BY CHARLES E. PARNELL.

Mr. Humboldt's Acineta, Acineta Humboldti, is a very curious and interesting epiphytal Orchidaceous plant. It is a native of Laguayra, from whence it was introduced in 1837.

It may be described as being a strong-growing evergreen plant, having short pseudo bulbs, and leaves about one foot in length, and producing its flower spikes from the base of the pseudo bulbs. As the flower spikes invariably take a downward course, the plant should be grown in a wire basket filled with sphagnum moss, in order to enable the flower spikes to fully develop themselves without interruption. The flowers are both singular and showy, but unfortunately they only last in perfection for a short time; they are of a deep chocolate color spotted with crimson.

This Acineta is a plant that can be easily cultivated, and should be grown in a shallow wire basket filled with sphagnum moss. In placing the plants in the baskets keep them well elevated in the centre, so as to avoid all injury to the young shoots by damp or an excessive supply of moisture. During the plant's season of growth they should be given a warm moist atmosphere, with a liberal supply of water at their roots. In the winter, or when in a dormant state, a lower temperature with a less supply of moisture is required. In order to preserve the flowers of this pretty species as long as possible, it is best to remove the plants when in bloom to as cool and dry a situation as one has at his command; and in watering the plants be very careful not to wet the flowers. Propagation is effected by a careful division of the plant, and this should be done just before it starts into growth.

The generic name is derived from "Akineta," immovable, the lip of the flower being jointless, and the specific name was given in honor of its illustrious discoverer.

Queens, N. Y.

A CURE FOR MILDEW.

BY STEWART RITCHIE.

In answer to "J. S." (page 12, January number GARDENERS' MONTHLY) I would say, syringe your roses lightly—just enough to wet the foliage; then apply a little flower of sulphur with the sulphur bellows, and if it is not a very bad case this will check it. Also mix a little sulphur and lime water or tobacco water to the consistency of paint and apply it to the coldest end of your flue; that is, providing the coldest end does not get heated to over 200°. If hotter than that it might injure your plants. My experience is that the above operation ought to be done every week during the dull winter months, on the principle that prevention is better than cure. Cold draughts, low temperature and muggy weather are all favorable to the development of mildew. Therefore, guard against them by keeping the temperature of your house as near to 60° at night as possible, with 10° or 15° higher during the day, and you will find your roses will be clean and healthy.

FAILURE OF "HER MAJESTY" ROSE.

BY S. F. TERWILLIGER.

Her Majesty, Queen Vic., may soon have a "jubilee," but I think it will be a long, long time before the rose "Her Majesty" has a jubilee. A great many florists are wondering how it is that there are so many who have endorsed this rose, and recommended it as a free bloomer, vigorous grower, etc. Like Mr. Milton I wonder if it ever grows and is free from mildew.

It is the only thing in the house that has mildew with me, and is always so; sulphur seems to have no effect whatever in stopping it.

In the *American Florist* for January 1st I see that Mr. William Falconer speaks very highly of it as found at John N. May's, at Summit, N. J. Perhaps Mr. May could enlighten us how to grow and to bloom it. Will he do so? He might also inform us why it is that the "Bennett" gives us so many nasty, dirty, purple buds at the same time and on the same bushes that give us bright, handsome ones. *Saratoga Springs, N. Y., Jan 6, 1887.*

[Mr. Falconer says in the *American Florist* that near Summit, N. J., where Mr. De Forest has superior rose houses, the Majesty has not done well, but Mr. F. has an opinion that it needs lighter soil than he uses.—Ed. G. M.]

EDITORIAL NOTES.

COAL GAS IN GREENHOUSES.—If there is a leak in the flue coal gas will get through and damage the plants, unless there is a good draught. To get a good draught be sure there is a clear fire on the ash pit. When there is a bright light on the ashes below, there is usually a good draught. Those who understand firing are careful to keep the coal free from the bars by frequent stirring. Good gardening is well shown by the manner the greenhouse fires are looked after.

FLORAL FASHIONS.—Within the last few years a great change has been wrought in the style of making up flowers for personal adornment. A few years back the idea of using Ivy leaves that had become discolored by exposure would have been considered absurd; yet at the present time their use has become general; and the once indispensable Maidenhair Fern is falling more and more into disuse, for, besides Ivy leaves, many other kinds of foliage are used. The Ivy leaves that are used are mostly imported from France; they are rather small in size, and of a beautiful bronzy hue, and when nicely worked up they are very effective; besides which they last well, where Maidenhair Fern would quickly perish. In all kinds of floral arrangements various sorts of colored foliage are very extensively used, and when brought in combination with flowers of distinct colors are certainly more appropriate than the indiscriminate use of Maidenhair Fern.—*Gardeners' Chronicle.*

CHRYSANTHEMUMS.—Those who desire to excel in growing these plants should look well after them at this season, when the young plants are well rooted. If they get stunted at first they are not easily recovered. They require very rich soil, and should be regularly repotted as often as the pots get full of roots. Those who do not care for extra nice plants simply set them out in the open ground and carefully lift the plants into pots in the fall. Whatever pinching is done to make plants bushy should be done early. Late pinching makes small flowers.

PLEASE SEND NO FLOWERS.—This is come to be a common notice under funeral advertisements, or marriage festivals—and it is no wonder, when we see the premium designs that often get honors at exhibitions and elsewhere. Even the reporters of the daily papers make fun of them. This is what a New York paper says of an event that occurred after a theatrical performance in which Miss Clara Morris had a prominent part:

"As the curtain went down after the second act of *Miss Multon* last night an usher rushed down the middle aisle of the theatre bearing a most unique floral device. It looked much like a big baby swaddled in white laces, with its little red head protruding. Some of the audience took it for a snow man with a piece of red flannel around its throat. As Miss Morris received the offering and wrestled it behind the curtain she looked much bewildered. It was, in fact, a floral representation of 'Liberty enlightening the world.' The florist had used poetic license with Liberty, however, and as a result she was lop-sided, one-armed, legless, and grinning."

A WONDERFUL BOUQUET.—English papers enjoy themselves hugely, and not without some reason, at the wonderful things in cut flower work that seem popular just now. They poke a great deal of fun at the floral pulpits, floral bibles, floral preachers and floral church bells, which without any floral associations seem to be "the rage" now and then. Yet they can themselves work up some funny things sometimes.

"On the recent occasion of the anniversary of the accession of the Sultan to the throne Count Abraham Camondo showed his loyalty by offering His Majesty a magnificent bouquet of nearly four yards in height and two and a half in circumference. The structure represented a lemon tree surmounted by a crescent, inscribed with the name of the Sultan on one side in French and on the other in Turkish. The Sultan was greatly touched by this sign of devotion, and caused the eight men who had carried the monster bouquet to the palace to be adequately rewarded. The construction of the bouquet, it should be added, occupied ten persons for a week, and was, no doubt, a triumph of art, casting far into the shade even the marvels which are daily put before the eyes of the London public in the show windows of the West-end florists."

FUCHSIAS.—These require to be kept growing freely, in order to have the best results. They do not like great heat, and are grateful for a little shade. Red spider is apt to be troublesome to them.

STATICE HOLFORDI.—This is recommended by a correspondent of the *American Florist*, as a useful plant in small quantities for cut flower purposes.

THE NEWER ROSES.—Her Majesty, Wm. Francis Bennett, American Beauty, The Bride and Papa Gontier, famous as they are, have hitherto been chiefly in the hands of good growers, with whom almost anything does well. They have now become cheap enough to get into everybody's hands, and we shall probably determine this year to what extent they will become permanently popular.

ROSE, PAPA GONTIER.—This Rose, we believe, has not had much notice in our pages; but it seems to be working its way into public favor. A correspondent of the *American Florist* says of it:

"I went yesterday to Mr. John Henderson's place at Flushing, L. I., to see the Papa Gontier Rose; had heard several good reports of it, but found on examination that none of them did it justice. As a cut flower for the American market it combines all the good qualities; it is free blooming, fragrant, and of clean vigorous growth; the color is brilliant and rich, and each bud has the now necessary appendage of a long stem, clothed with handsome foliage. When this rose was sent out by Nabonnaud, four or five years ago, several of our rose-growers tried a few of it, but from carelessness or a want of discernment none of them discovered its merits."

SCRAPS AND QUERIES.

CULTURE OF CYPRIPEDIUMS AND POINSETTAS.—A lady writes: "It was very interesting to read that the blossoms of the Cypripedium insigne remained fresh for a long time in water, but I would be much more interested in hearing how to get the blossoms in the first place. I have had one for five years; it has made an apparently healthy growth of about one leaf a year, but looks vigorous. I have tried several plans. The last has been to repot it in equal parts of loam, manure and potsherds, and cover it with a melon gloss. I think it does look as if it were growing a little more. But what can I do to get blossoms?

"And my Poinsettas are not what they have been. The blossoms are larger but the bracts are fewer, and as it is more desirable to have bracts than flowers, I would like to know what is the matter. I have always been very successful with them before. I may have made the soil too rich when I potted them this fall. I have a small greenhouse or conservatory where everything else is growing well. Please help me about these two plants."

[As soon after you read this as practicable (in January would be better, or just after they have done flowering) repot it in just such soil as you describe, and as soon as the weather is fairly settled for warm, say second week in May, set the pot in a warm spot out of doors, and yet partially shaded from the midday sun. Let it remain here all summer, and about the end of September take it into a cool greenhouse. It does not require heat. Such a temperature as a Camellia loves will suit it. It is a native of sub-shady places in the mountains of Mexico. Poinsettas, on the other hand, need very rich soil and plenty of water and hot sun during summer time. Pot them also now, in rich earth, and cut them back as low as you want them, so as to get a vigorous growth of young wood. Set the pots out in the full sun, where they may have plenty of water given them. Pinch back the growing shoots so as to make them more bushy, and, if desirable to get them more bushy, pinch again a month afterwards. If very large bracts are preferable to a number of flowers, pinch back only once, for every pinching means flowers of a smaller size. In the fall put the plants in the warmest part of the house. No part will be too hot for them in reason.

You will have plenty of Cypripedium flowers under this treatment, and as large and fine Poinsetta bracts as you can desire.—Ed. G. M.]

A FINE LILIUM CANDIDUM.—Mr. C. J. Power, of South Framingham, Mass., sends a photograph of the common white lily, which has 22 expanded flowers, and 13 unopened buds. It was from a forced specimen flowering in April, 1886. This must be the banner plant, at least we never knew of one to beat it.

CULTURE OF CALLAS.—Mr. L. J. C. says: "I have great success with Callas, in keeping them in stoneware butter crocks filled with the following: Four inches broken charcoal, then rich earth mixed with fine charcoal dust to within four inches of the top, then water. In a large crock 12 or 14 inches high, the stalk grows three inches in diameter. I give you this bit of experience, for every woman who keeps plants wants a blooming Calla."

HEATING WITH WOOD.—J. S., Harrisburg, Pa., asks: "Is heating a rose-house with wood instead of coal likely to have any injurious effects on the plants? If so, what is the cause? An answer through the columns of your magazine will much oblige."

[Wood is not popular with gardeners because it burns too fast, but if properly banked with ashes when half burned, a thick block will keep a good heat as long as coal will. There are no gases that we know of escaping from burning wood, likely to be very injurious to vegetation, not nearly as much as from coal, in which there is always some sulphur.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

A friend asks, when is the time to prune fruit trees? just as he would ask when is the best time to dine? Numbers of trees need no pruning, and yet no implement is more valuable to the fruit grower than a good set of pruning implements. Just when to prune, no magazine can teach; nor can any one learn from an essay how to do the work. We can make suggestions in a general way, but the good use of them will depend on how much the owner loves his tree, and has been favored with a glimpse of the tree's secret history. A young tree needs some of its branches thinned, so as to lay the foundation of a permanent form,—or it may not have enough branches for this purpose, and some have to be cut back to produce more. We may desire one strong branch where there are two or three weak ones, so we cut them all away to the trunk, and the strong one will then sprout. Suckers come out from near the roots, or sprouts from the main stem. The good orchardist takes these off with finger and thumb in the summer while green, but if forgotten then he does it now. He learns after a while that sprouts on the trunk mean something wrong with the circulation. The food-giving sap does not easily reach the ends of the branches. Perhaps he finds the ends of the growing shoots have been injured by frost or drought. In these cases the ends are shortened in order to make an active growth. In large trees this sluggish action often comes from over-bearing. Then the heart wood decays. Quite large branches then often have to be sawn out. When these large branches are sawn, the cut should be made close to the trunk, so that new wood and bark shall grow over. The exposed wood may rot and decay before the new growth covers it, so all such wounds should be covered by any kind of common paint. Sometimes trees get hide-bound from poverty of the soil, from the attack of scale or other insects, or from exposure to unusually hot sun. In this case a slitting of the bark by the pruning knife, up and down the stem, is very beneficial. It is best to avoid this necessity by a plenty of good food to the roots. Raspberries and blackberries are usually shortened because the cold winters or hot summers, or perhaps fungus, weaken them. Gooseberries and currants are usually thinned out, because large healthy leaves are essential to fine fruit, and the leaves are small and feeble when the branches struggle with each other. Grapes may be thinned and shortened for nearly every reason given in the other cases. And then pruning may serve to bring very vigorous trees into fruit. On the whole, pruning checks the vital powers of a tree, and a severe pruning will bring it into fruit within two or three years, but a severe root pruning is much better practice.

In regard to vegetable gardening in the Middle States the work for February will, for the most part, consist of preparations for future operations, and particularly for dealing with the manure question. All those kinds that are grown for their leaves or stems require an abundance of nitrogenous manures; and it is useless to attempt vegetable gardening without it. To this class belong cabbage, lettuce, spinach, etc. The other class, which is grown principally for its seeds or pods (as beans, peas, etc.), does not require much manure of this character; in fact they are injured by it. It causes too great a growth of stem and leaf, and the earliness — a great aim in vegetable growing — is injuriously affected. Mineral manures, as wood, ashes, bone-dust, etc., are much better for them. For vegetables requiring rich stable manure, it is better that they have it well rotted and decayed. Nothing has yet been found so well fitted for the purpose as old hot-bed dung; though to the smell no trace of "ammonia" remains in it.

In the open air, should the weather prove favorable, as it often is about the end of the month, peas and potatoes may be planted. Frost seldom gets deep enough in new dug ground to injure them after this date.

In the more southern States, the gardener will lose no time in getting in his potatoes, beets, carrots, parsnips, peas, spinach, radishes, lettuce, onions, and salsafy. These should be the first crops put in after the season breaks up for good. The earlier they are in the better. Asparagus, rhubarb, and horse-radish beds may now be made. Asparagus roots are generally planted too thickly to produce fine shoots,—they starve one another. A bed five feet wide should have three rows, and the plants set about eighteen inches apart. A deep soil is very important, as the succulent stems require every chance they can get for obtaining moisture. About four inches beneath the soil is sufficient to plant them. Rhubarb also requires a deep, rich and moist soil. Horse-radish beds are best made by taking pieces of strong roots, about one inch long, and making a hole about a foot or fifteen inches deep, with a dibble, and dropping the piece to the bottom of the hole; a clean, straight root will then rise up through the soil. Crowns or eyes are better than pieces of roots,—where they can be had—and a rich, clayey soil better than a light, sandy soil.

About the middle or end of the month, or still later in the North—say the middle of March—celery and late cabbage may be sown. Here, we usually sow the second week in March.

In the Northern States, Broccoli and Cauliflower when sown in March as recommended, do not head early enough in Fall. It should be sown about the time of Early York cabbage, in the hot-bed, during this month.

COMMUNICATIONS.

THE BLACKMAN PLUM.

BY H. E. VANDEMAN, POMOLOGIST OF THE U. S. DEPARTMENT OF AGRICULTURE.

In answer to your Texas correspondent in the November number, I would say something about this worthless fruit, but am not able to give him the special information desired as to its actual fruitage. In fact, I have never seen it fruit and join him in the belief that it never does except in very rare cases. The reason of this is, that it is a hybrid between the plum and peach. No doubt this statement will bring out much criticism, but I feel warranted in saying so. During an official trip of observation in Texas this summer I examined a great many trees of the Blackman and in no case did the owner report fruitage. In general appearance the tree resembles the peach fully as much as the plum. The leaves have glands and this never occurs on any species of plum.

I venture to guess that the seedling of Wild Goose that Mr. Stell speaks of is a chance hybrid also. On the grounds of T. V. Munson, at Denison, Texas, I saw at least five different seedlings from a wild tree of Prunus Americana which stood near a peach orchard that had somewhat different characteristics, but all plainly showed the effects of hybridization with the peach. Mr. Munson had saved them from a lot of plum seedlings (grown for propagating purposes) especially to examine them with regard to this interesting subject. They have so far failed to bear although they have bloomed one or two years. Mr. Munson first called my attention to the Blackman being a hybrid. Judging from what I have seen and heard of this fruit it seems to be a failure except as a botanical curiosity and should be dropped from the nursery catalogues and the stock on hand burned.

Washington, D. C.

[Botanists would be glad to know for a certainty that two such distinct genera as the Amygdalus (peach) and Prunus (the plum) would hybridize. The facts reported certainly favor the belief—but on the other hand we must remember that a genus that gave us the almond, the peach and the nectarine,—all without hybridization, but by the sheer force of natural variation alone, may be capable of quite as much sporting as reported by our correspondents. The same is true of the genus to which the plum belongs. Sterility proves nothing. Hybrids are often abundantly fertile, while many a variation well known to have no relation with hybridity, is as sterile as can possibly be.

Exact experiments in these things would be of great value in scientific pomology, and it will no doubt be one of the labors of the new Department of Pomology to investigate these matters. One with the time to isolate a few flowers, emasculate them, and apply the pollen of the opposite genus, could settle the question in a couple of years.—Ed. G. M.]

EDITORIAL NOTES.

The Jessie Strawberry.—This was raised by Mr. F. W. Loudon, of Janesville, and is represented as of great size, productiveness and general quality. Berries have been gathered 6½ inches round. It is a seedling of the Sharpless.

The Globe Peach.—This does appear not to be an original Pennsylvania seedling, but one the name of which was lost by the owner, and then re-named Globe.

Peach, Madame Pynaert.—Though American seedlings seem to give us all the improvements we desire in the peach, we get some excellent ones from Europe sometimes, and it is well to keep the track of new ones introduced in that quarter. One under the above name is very highly spoken of by Belgian pomologists. It is a very dark red peach, very large (12 inches round), superior quality and a regular annual bearer. It was raised in 1881.

Quality of the Le Conte Pear.—It is said that this, like the Keiffer, is a pear of very poor quality with the ordinary treatment, but with skillful handling some of very superior quality can be produced.

Pear, Comte de Flandre.—The ***Bulletin D'arboriculture***, of Ghent, giving a colored plate of this fruit, says that in that country it is one of their highest flavored pears. It is of the size and somewhat the form and appearance of the Vicar of Winkfield. It was raised by Von Mons in 1843.

Bees Eating Grapes.—At the recent meeting of the Michigan Bee-keepers' Association the statement persistently presented by bee-keepers that bees will not eat grapes, is now to be modified to this, that they will not eat "sound" grapes. The whole discussion showed that the bee-keepers were in a quandary how to act so as to protect themselves against law-suits from their injured fruit growing neighbors, and a wholly new position recommended. The point they will now make is, that the neighbors would not have any fruit at all were it not for the visits of bees to fertilize the flowers, and this is to be used as a set-off to the destruction to the "unsound" fruit in the fall.

Sowing Vegetable Seeds.—Do not forget the lessons recently given that vegetable seeds must not be put deeply in the ground. This is a frequent cause of seed-rotting. If the ground is dry when the seed sowing is in order, it is often sufficient to scatter on the surface and then roll. In small garden culture of vegetables, it is often enough to make a mere scratch along the line, and then tread in with the feet.

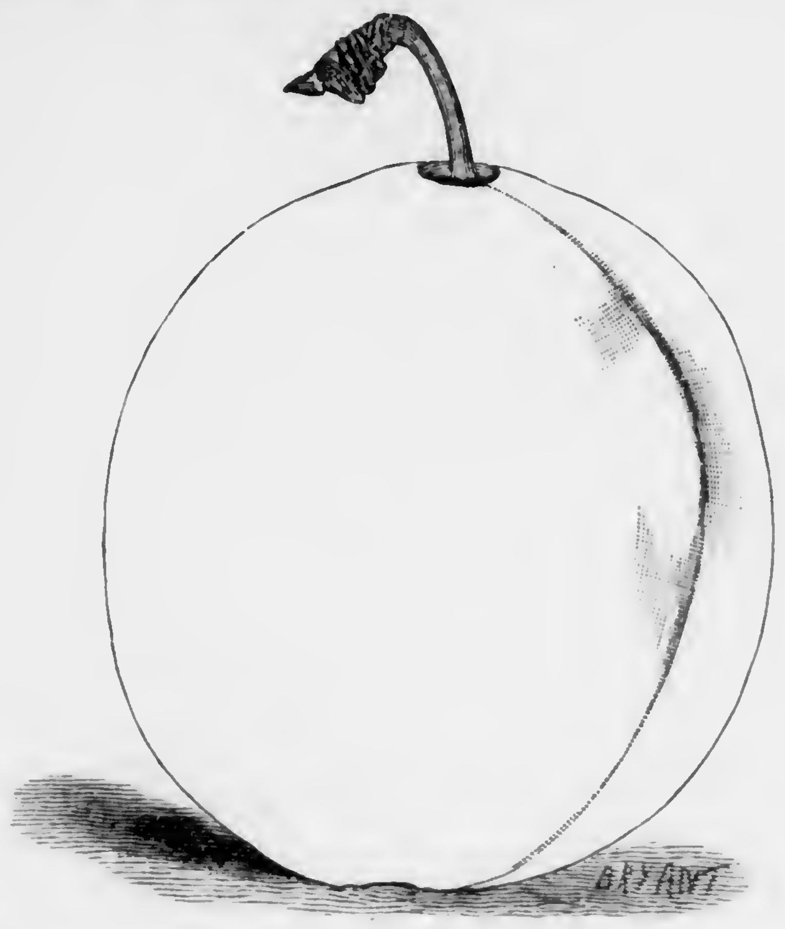
The Stanton Bean.—This is claimed to be one of the earliest and most prolific of all kidney beans.

Scoville Tomato.—This is a second early, and claimed to be one of the best varieties for canning purposes. Some specimens reach 12 oz. in weight.

NEW OR RARE FRUITS.

The Lovett Plum.—We received the following from E. B. Good, Manchester, York County, Pa., on August 5th: "I send to-day by mail a few specimens of a plum originating in York County, Pa., some twenty odd years, from a seed of Greengage. The tree is enormously prolific and a vigorous grower. The specimens are of medium size, specimens having been raised to weigh four ounces. Give your opinion of the plum through the Gardeners' Monthly. There is something in this plum. Further particulars if wanted."

Some wise pomologist has written that he who names another fruit without being able to show that it is better than the thousands already existing, is an enemy of mankind. As we have always had a great fear of the enemy of mankind, we have not been over-anxious to have the Gardeners' Monthly often in the ranks of new fruit mongers. In the present instance we venture there, believing this plum is a valuable addition to the list. In comparing it with the first-class varieties to which it is related, one would look for Duane's Purple, Nectarine, the Purple Favorite or the Goliath, from all of which it differs, either in size, form, quality, or season of maturity.



It is very large: 2¼ oz. and measuring 5½ inches in circumference. The form is roundish oval, with a very light suture, with the slender, usually-curved stem, about one inch long, set in a very shallow basin; color, dark red, with very numerous, almost invisible, yellow dots,—the whole covered with a deep, purple bloom. Flesh yellowish, rather firm, adhering but slightly to the stone, sweet, but not cloying. Season at York, Pa., 1st of August.

SCRAPS AND QUERIES.

Planting on the Site of Old Orchards.—"F. M.," Ostego, New York: "We have an old orchard of about 20 acres that is nearly done, and would like to set out five on the site, but are told by the late owner from whom we have recently purchased, that the soil is run out, and new trees will not do. Is this the general experience?" Not the general experience, but very often trees do not do well on the site of former trees,—not, however, because the soil has run out, but from the presence of fungus from the old decaying roots. When these roots have become thoroughly decayed, you may plant very safely on the site of an old orchard. Of course there can be no rule as to time. In some cases the old roots will be sufficiently decayed in a couple of years, but generally it will take more. It is only of late years that it has been conceded that the fungus from old roots will spread to those on living trees. Want of this knowledge led to differences of opinion as to whether it was or not wise to plant on old sites.

Imperfect Fertilization.—Mr. Green observes: "Your say our correspondent wants the exact meaning of imperfect fertilization. The honest answer is, 'we don't know.' The truth is that with the experienced and learned 'what we do not know' will outbalance what we do know, regarding plant growth and plant instinct. Mr. T. V. Munson holds that the pollen of the grape is attracted to adjacent blossoms by some unknown attraction. It must be likewise with other blossoms, for while the Crescent strawberry yields no fruit grown by itself under glass, it bears a partial crop, planted in fields a long distance from any other variety. Whether it is desirable for fruit growers to keep bees for fertilizing flowers has not been discussed to my knowledge, but it would appear to be desirable. During rainy seasons it is not possible for an ordinary supply of bees to visit each blossom. True, it is not required in all cases, but probably in more cases than is generally supposed."

The Vital Effects of Pruning.—Mr. Chas. A. Green writes: "I am pleased to see so high an authority as the Gardeners' Monthly announcing that it is well established that pruning enfeebles rather than invigorates. An editorial by the writer to that effect years ago was severely commented upon by the agricultural press, it being generally understood that pruning a tree increased its vigor, whereas every branch and leaf removed is a loss incurred only to improve the form and appearance, or to reduce the surplus fruit."

The Largest Pears in the World.—"A Lover of Fruits," Worcester, Mass., writes: "Being interested in pears, this item in December number of Gardeners' Monthly caught my eye, 'The Largest Pears in the World.' No doubt about that, thought I. But in two or three days the enclosed clipping appeared in the *Worcester Daily Spy*, December 14. I have seen the pear, and have no doubt of the correctness of the figures given. Let Guernsey take a back seat, for Oregon has the floor!"

The following is the paragraph referred to:

"A pear raised by Henry Adams, Myrtle Creek, Douglas county, Oregon, is sent to this city to E. D. McFarland as a sample of the fruit of that section. It appears to be of the Duchess variety, and weighed 2 pounds 11 ounces when first gathered. The circumference is 14 inches, length 8 inches, and width 5 inches. It is now placed in Putnam & Thurston's show window."

The Melon Pear, or Pear Melon.—A Philadelphia correspondent says: "Looking over the Gardeners' Monthly—which came this morning—I was somewhat surprised at your remarks on the 'Melon Pear,' alias 'Pepino,' and 'Solanum Guatemalense,' and which you call Solanum Melongena, or Common Egg plant. I think you are wrong—at least, I hope so, the 'wish being father to the thought'—for the following reason: In the October or November number of your magazine, I saw the advertisement of Gustav Eisen, of Fresno, Cal., describing this plant. I wrote immediately for a catalogue, which, of course, he sent me. Fond of novelties in the botanical kingdom, and interested in the plant from his description, I wrote to him for a lot of them. He sent me by mail 21, which arrived here on the 2nd of December, in excellent order. These I placed in the hands of Mr. Henry Fox, North Broad Street, florist, who potted them, and where they are now subject to your inspection. My purpose is to plant them on my place at Point Pleasant, N. J., when spring opens. I append Dr. Eisen's description, cut from his catalogue."

"*Pepino or Melon Pear*—(Solanum Guatemalense.)—This is one of the finest fruit of recent introduction. In places with no frost it becomes a small shrub bearing abundantly all the year around. In other places it assumes the characteristics of a soft wooded plant, like the red pepper. It ripens its fruit in 3 to 4 months after planting. The fruit is about the size of a hen or duck egg, and is yellow with small violet stripes. It has no seed nor tough skin, and resembles in some respects an egg plant. In taste it resembles a melon, but has an abundance of a fine acid which in hot weather is very agreeable. It is eaten fresh. It stands shipment to the East. It will grow in a cool climate, but if exposed to too much heat the fruit will be inferior. For further particulars see circular. This fruit has during the last year matured in many places in California, and several large plantations have been started, with a view to supply the market. Plants by mail 35 cents each, in quantities price on application."

"In the same number of the Gardeners' Monthly appeared the advertisement of Martin Benson, of Swanwick, Ill. To him also I wrote, asking for a catalogue, which he sent accordingly. Among many novelties in this catalogue, he describes the 'Melon Pear,' and from him I bought a dozen large plants, which he retains till I write for them next spring. I attach his description cut from his catalogue:

"The Melon Shrub, as it grows in the Central American highlands, is, as the name defines it, a shrub. It reaches at its best two or three feet either way, but is generally smaller, and recalls in many respects the Chili pepper vine, the tomato or the nightshade. The flowers resemble those of the Chili pepper, are very numerous and of a beautiful violet color, most charming when used in floral decorations. When planted, the plants should be set in rows four feet apart and two feet apart in the rows. About six weeks after being set out, the fruit will begin to set, and in three months after planting the fruit will ripen and continue to ripen until frost. The fruit is of the size of a hen or goose egg, or even larger, and of the same shape. The color is lemon or pale orange, with streaks or waves of bright violet, the whole making a fruit unrivaled in beauty. The interior of the fruit is solid pulp, free of seeds, of a pale yellow color, and of flavor resembling that of a fine musk melon, having also a rich sub-acid taste. It is so wholesome and delicious that when the fruit is eaten on a hot day it allays the thirst for several hours. The plant is an enormous yielder—I have seen plants of small size bear thirty large fruits. The Melon Shrub can stand light frost, but a heavy frost will cut it to the ground; the dead branches should then be cut off, and the plants covered with straw and earth.

"The Melon Pear is not a tropical fruit; it delights in a cool atmosphere, and will without doubt do as well here in the north as tomatoes, and will prove a most valuable and profitable fruit. It may not be able to stand our winters, but that is not essential—tomatoes are always killed, but are not less grown on that account. The Melon Pear can be wintered as easy as potatoes, by taking the roots up and keeping them in a cellar. Should be planted here by the middle of April, and cultivated like tomatoes. They will begin to ripen by the middle of July or first of August. Make a grand pot plant. Price of genuine plants, $1.25 each, $10 per dozen."

"Now, you may be right in your conjecture that the Melon Pear is identical with the Melongena or Egg Plant, but I cannot conceive that two men—nurserymen—like Eisen and Benson, living so far apart, and having, apparently, no interests in common, should both endorse and recommend the same worthless plant, and a humbug at the same time."

[It was a correspondent, not the Editor, who identified this as a species of Solanum, and not either a Pear or a Melon as its name would imply. The additional information, now furnished, shows that this surmise is correct, so far as its being a Solanum is concerned. We cannot understand the sense of calling a Solanum either a Melon or a Pear. It may not be a form of S. Melongena,—but it may for all, for there are few species of Solanum that vary like this does. When "we were boys," a very pretty form, white and striped, with fruit about the size of a hen's egg, was very common in greenhouses. The common name, "Egg plant," is derived from this old ornamental variety. After all, when we remember that "Melongena" is a name probably meaning "bearing apples," or possibly "melons," the common people have perhaps as much right as the botanists to call it Melon Plant or Pear Plant, deceptive as the names strike one at first.—Ed. G. M.]

Cutting Back Peach Trees.—A "Maryland correspondent" says: "Some weeks since a very intelligent gardener insisted with me that cutting back budded peach trees was one source of weakened power that led to disease. The budded peach is, as you know, operated on near the ground. The next winter or spring the plant, perhaps four or five feet high, is cut down to the bud. Numerous sprouts come, and one only left to form the tree. This check, he says, affects the constitution of the tree. The seedling tree is not cut back, and for this reason it is always a healthier tree. Is there anything in this doctrine?"

[We think there is a little theoretically,—but practically it is we think so little of an injury as not to interfere seriously with the health. But it is worthy of further thought.—Ed. G. M.]

Bidwell Peach.—A correspondent says that although this peach promises well it is hardly proper to say that it is regarded as one of the most profitable in Florida, as it has only fruited for three years, and on the grounds of the originator. He thinks it "may" become as popular as described, but it has not yet had that opportunity to prove itself.

Mushroom Culture.—"Cincinnatus:" We do not know of any one who is now growing mushrooms as a specialty. We think we can answer your question, that there is "money in it." But the hap-hazard method which we apply to most of our gardening operations, will not do in mushroom growing. If any one choose to master the culture of the mushroom, they usually are surprised at its simplicity. Yet simple as it is, the knowledge must be acquired thoroughly. Are there many of our readers now growing them?

FORESTRY.

EDITORIAL NOTES.

Forests and Rainfall.—Prof. Cleveland Abbe in a recent lecture before the Franklin Institute of Philadelphia, attacked the "popular error" that forests had any influence on rainfall. He showed that in eastern Pennsylvania during the past one hundred years there had been a slight increase in rainfall, though the forests had almost wholly disappeared. He explained that the increases or decreases in earth elevations influenced the annual rainfall, and not forests. It is too bad, however, to charge this error to the "popular" side. It is an error propagated by so-called men of science, and has been a pet theme with many a science association,—and it has been the work chiefly of this magazine to show that there was no foundation for the notion that was worthy of the name of science.

We have protested against the error with considerable earnestness, because of its injurious influence on practical forestry. It has led to the waste of hundreds of thousands of dollars in fruitless "commissions" and legislative blundering, and prevented the forestry question from standing on its profit and loss foundation, as a commercial undertaking should be—which by this time might have led to profitable results.

Catalpa Trees.—Prof. Beal says of his experience at Ann Arbor: "Four years ago I should have advised planting Catalpa speciosa where durable timber was desired, but further time shows that the trees are likely to be short lived." Our Western friends must not be in too much of a hurry either to praise or to condemn. They were cautioned from the first that their extravagant laudations of this tree were calculated to injure, and now we should fear that this experience of Prof. Beal at Ann Arbor too hasty on the other side, for a generalization. In the East we have Catalpa bignonoides a hundred years old and good for another hundred, and there is no reason why Catalpa speciosa is not as long lived except in exceptional localities like Ann Arbor.

Scotch Pine Timber.—This has been found in Europe to require replacing as railroad ties every three or four years.

Limestone Soil for the Chestnut.—We were amazed to find the Editor of this magazine quoted by the *Weekly Press* as stating that the "Chestnut needs limestone soil," as exactly the contrary is the Editor's experience. The Chestnut rather avoids than needs limestone soil. On referring to the September number, we find that the Editor of the *Press* is not to blame for the imputation. The case is simply a grammatical one. The whole subject refers to the Larch,—but by an unfortunate use of the pronoun "it," one may be justified in inferring the Chestnut is alluded to. But the fact is, as properly stated by the Editor of the *Press*, the Chestnut rather avoids than needs limestone soils.

The Paulownia.—This rapid-growing Japan tree is rather coarse in growth and foliage, but when it can get a chance to stand out by itself, and develop freely on all sides, it is not a bad sort of a fellow. Its great redeeming point is its lovely blue flowers, which throw a fragrance around for a long distance away. It is, we think, a valuable timber tree, though we know of no American experiments with the wood.

Birchwood Timber.—Referring to the Canadian forestry exhibit in London, an English paper says:

"Birchwood, particularly that of Betula alba, or the White Birch, is much used in this country for slate frames, bobbins, and spools, light furniture, and occasionally for toys. The wood is light, easily worked, and takes a very fine polish. It lasts well under water, for which reason sluices and floodgates are made from it, as well as ship bottoms, and piles from the older and harder trees. Betula lenta, the Black or Cherry Birch, of which some notes appeared recently in your columns regarding timber produced in this country, is a valuable tree, the wood being hard, of a beautiful reddish tinge, almost like Mahogany, and extensively sought after for cabinet-making and indoor purposes generally. It is perfectly well adapted for culture in Britain, and being a handsome average-sized tree, and valuable as a timber producer, should, we think, be freely intermixed amongst our commonly planted hard woods."

A New Hemlock Spruce.—Under the name of Tsuga Caroliniana, Prof. Sargent sends a drawing to the London *Gardeners' Chronicle*, with the following description:

"It is certainly a remarkable fact that such a very distinct tree as the Carolina Hemlock should have escaped the notice of the early botanical travellers in the Southern Allegheny Mountains. Neither W. Bartram, who crossed the mountains where it is found as early as 1777, nor the Michaux, father and son, who ten years later made more than one visit to the same region, nor Fraser who was with them, nor M. A. Curtis, who explored more fully than any of his predecessors or successors the botany of the Alleghenies, appear to have been aware that the flora of Eastern America contained two species of Hemlock. It was not until 1850 that Prof. L. R. Gibbes, of Charleston, recognized an undescribed species in the Carolina Hemlock, for which he suggested several years later the provisional name (never published) of Pinus laxa, and it was only in 1881 that the species was properly characterized by Engelmann.

"From Tsuga Canadensis the Carolina Hemlock may be distinguished by its larger, wider, and darker colored leaves, six to ten lines long and nearly one line broad, retuse or often notched at the ends, without stomata above, and with two stomate bands below, and with strengthening cells (not found in the leaves of T. Canadensis) under the epidermis on the keel, midrib, and edges; by its larger cones, ten to sixteen lines long, the scales oblong, longer than wide, spreading when ripe at nearly right angles, the broad bracts slightly cuspidate, the seeds less than half the length of the narrow wing.

"The Carolina Hemlock is a small tree of compact pyramidal habit, with flattened spray, the branches densely clothed with dark green shining foliage, sometimes 50 or 60 feet in height, although the trunk rarely exceeds 2 feet in diameter. It is pretty widely distributed along the Blue Ridge west of the valley of the French Broad River in North Carolina, although nowhere common, and only a few individuals are found together in the same locality; it is strictly confined to the slopes and summits of dry rocky ridges, at an elevation of 2000 to 2500 feet above the sea level, where it is often found growing side by side with the more common T. Canadensis.

"The Carolina Hemlock is one of the most ornamental Conifers of Eastern America, recalling in its compact pyramidal habit and dense foliage, alpine specimens of the Western Tsuga Pattoniana. Although hardly known in cultivation yet, a few plants have been raised in the Arboretum. The climate of the region where it is found, however, indicates that Tsuga Caroliniana will prove hardy in the Northern States and in Europe. The illustration on p. 781 is from a drawing made by my associate, Mr. C. F. Faxon, and is taken from a specimen which I collected in September upon Cæsar's Head, an outlaying spur of the Blue Ridge in South Carolina."

[We may add to this, that from a plant growing in Philadelphia it appears to be as hardy as the common hemlock spruce. The leaves appear to be more scattered on the branchlets, and are linear instead of tapering as in the well-known form. It is readily distinguishable by the foliage, a merit in the cultivator's eye, rare in coniferous trees.—Ed. G M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

FLOWERS ON THE SWEET POTATO IN FLORIDA.

BY W. C. STEELE.

About a dozen years ago, while I was engaged in fruit growing and market gardening in Northern Indiana, a new variety of sweet potatoes was announced in the papers and heralded as a wonderful acquisition. It was called the Southern Queen, and wishing to test it we procured a few plants. The second season, frost held off quite late in the fall, and one hill which had grown with unusual vigor and luxuriance, put out several blossoms at the ends of the vines.

Coming to this place in November, 1883, I found, within a week, sweet potato blossoms, and every fall I see more or less of them. These flowers are only found on vines of one variety, called here the the White West Indias. The flowers, leaves and potatoes are so much like the variety grown at the North as Southern Queen, that I feel quite confident that they are identical. *Switzerland, Florida.*

THE PEAR MIDGE OR PEAR DIPLOSIS.

(Diplosis nigra [?], Meigen,) Order Diptera; Family Cecidomyidæ.

BY PROF. C. V. RILEY.

We have for some time been interested in an insect which has appeared in a limited region near Meriden, Conn., confined almost entirely to the large fruit farm of Messrs. Coe Bros. In the spring of 1881 these gentlemen had some slight correspondence with the Department, of which no mention has been made in the reports, and there the matter was dropped until June, 1884, when they wrote to us in reference to the matter.

As will be seen by what follows, there is every reason to believe that this is an introduced species; that it has been introduced within quite recent years, and that it is so far confined to a very limited region. It is for these reasons that we call particular attention to it now, as we did at the meeting of the Mississippi Valley Horticultural Society held in New Orleans last January, where we urged, as we would now urge, that some decisive steps be taken to stamp it out. If, as we now believe, this new pest is confined to the orchards of the Messrs. Coe and such as immediately adjoin them, it seems to us that some such society as the American Pomological Society would be justified in empowering a committee to especially look into the matter and effectually destroy the pear crop within the limits of the insect's present distribution in this country for two or three consecutive years, compensating, if need be, the owners for the loss of their crops.

In view of the immense losses sustained within the last twenty-five years by the spread of introduced injurious insects, which might in the beginning have been stamped out or kept out by proper concert of action, we cannot urge too strongly such action in this case.

In order to learn all possible facts in reference to the insect, we had Mr. Smith visit the locality, instructing him to collect a large amount of material, to ascertain whether the larva leaves the the fruit for pupation before the fruit falls or afterwards, and more particularly to collect all facts bearing upon its possible importation and upon its distribution. Mr. Smith's report was published in our last annual report (pp. 396—398) and need not be repeated here.

LIFE HISTORY AND HABITS.

From a careful rearing and study of this insect in the office, and from correspondence with the Messrs. Coe, as well as from Mr. Smith's report, we may summarize the insect's history in America as follows:

The eggs are laid in the spring, in the flower end of the fruit, as soon as or even before it "sets." The fruit grows and soon assumes a somewhat distorted appearance, or, as Mr. Smith says, "an irregular, somewhat knobby" look, or occasionally seeming abnormally round. If one of these young pears be cut open, its interior will be found to be channeled and grooved, the seeds separated and eaten into, and the entire core disorganized. Surrounded by excremental pellets and partly imbedded in the flesh of the fruit will be found from ten to thirty little yellowish-white maggots, which, as they grow, absorb more and more of the pulp, usually, however, attaining their full growth before the interior of the pear has been entirely consumed. When full grown they leave the fruit either through the calyx end or through some crack or soft spot and drop to the ground, working their way underneath the surface.

The larvæ (Fig. 1) progress, as do other species of Diplosis, by a series of skips or jumps, by which they fling themselves an inch or more in a horizontal direction. The anal end of the body is curved under until it reaches the posterior margin of the first thoracic joint, the anterior end of the body being also somewhat curved downward, and is then suddenly snapped straight with such force as to lift and throw the whole body.

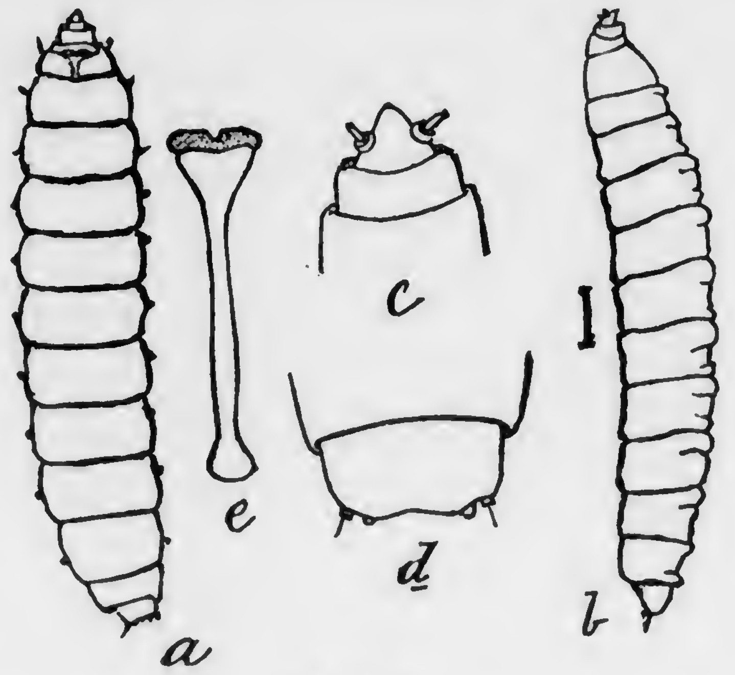


FIG. 1.

From observations made by the Messrs. Coe, it seems that after the larvæ are full grown, or nearly so, they leave the fruit, preferably during a rainstorm, or are forced from it by the rain penetrating the cracks in the fruit. The following extract from a letter dated June 12, 1885, bears upon this point:

> "Our men had gone over the orchard once, picking all that they could find, and were going over it a second time when a violent rain-storm obliged them to quit for an hour or two. Returning after the rain they observed that a basket that had been left out in the storm with 2 or 3 quarts of the wormy pears was alive with the larvæ, hopping about like so many fleas. They had all left the fruit and were trying to escape from the basket. Upon examination we found that the infested fruit on the trees had no larvæ. So the work was not so thoroughly done as we had intended."

Mr. Smith's observations prove that the larvæ reach the ground by dropping from the tree, after which they immediately seek to hide themselves beneath the surface. They burrow to a greater or less depth, depending upon the porosity of the soil, but rarely exceed an inch. They remain for a considerable time (just how long is not yet determined) in the naked larva state before commencing their cocoons, and then in the cocoons for another length of time before transforming to pupæ (Fig. 2, *c*.)

The cocoon is whitish, thin, but tough, oval in form, and covered with adhering grains of earth.

There is but one annual generation. The larvæ which go into the ground about the 1st of June remain there, either as larvæ or pupæ, until the following spring. This is proven definitely by our observations at the Department. From a lot of pears received from Mr. Smith June 10, 1884, the larvæ went into the ground almost immediately and the flies issued as follows, the earlier ones being influenced to premature development by the warmer temperature of the vivaria:

	Specimens issued
January 9, 1885	3
" 15, 1885	1
" 28, 1885	1
" 30, 1885	1
February 2, 1885	1
" 7, 1885	1

	Specimens issued
April 9, 1885	2
" 10, 1885	13
" 11, 1885	12
" 12, 1885	22
" 13, 1885	8

The Messrs. Coe were led to suppose that the insect might be double-brooded, by finding pears as late as August infested with similar larvæ; but from pears sent August 31 for examination nothing but numerous specimens of a species of Drosophila were bred, and these had doubtless been attracted by the diseased or rotting condition of the fruit.

In giving out the adult fly the pupa breaks through the cocoon and works its way through the earth to the surface, struggling until nearly its whole body is in the air and the anal end only is held in the earth. The skin of the thorax then splits longitudinally and the adult fly (Fig. 2, *a*) makes its escape.

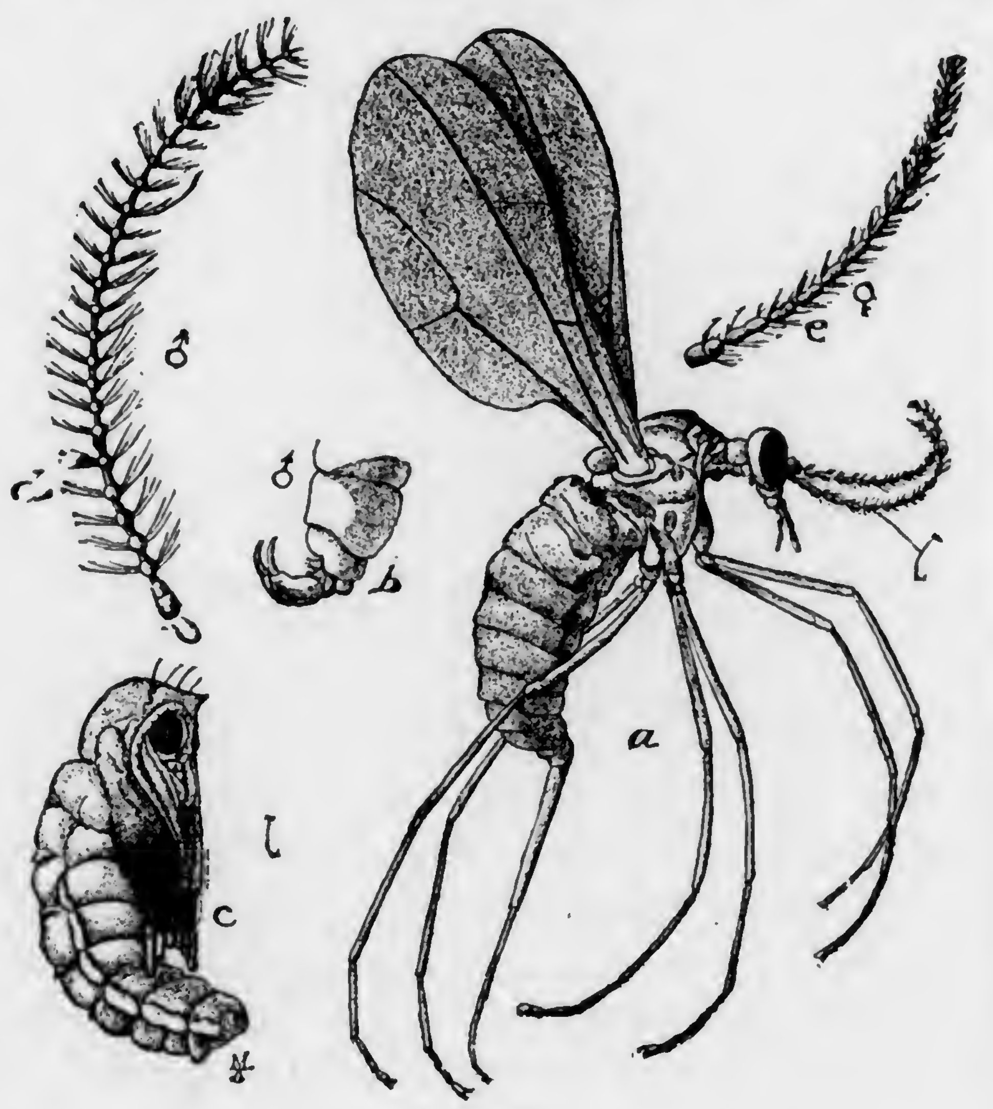


FIG. 2.

Three specimens of an undetermined species of the genus Platygaster were found in the breeding jar containing the infested pears, on April 9 and 11, and had evidently been parasitic upon the larvæ of the Pear Midge, although no parasited cocoons of the latter were found. No other insect was contained in the jar, and there is little doubt of the parasitism. As will be shown later, there is a strong probability of the importation of this midge from Europe, and this parasite may very readily have been brought over with it. There are more than one hundred described species of the genus Platygaster in Europe, the descriptions of many of which are inaccessible. Walker's species, of which there are sixty-nine, are very insufficiently described. Hence there will be great difficulty in determining this species, and we hesitate to describe it as new.

No better, simpler, or more satisfactory remedy can be devised, in the light of what we now know of the habits of this insect, than that used the last season by the Messrs. Coe, which is, to strip the fruit from the trees in an "off year" and destroy it either by burning after covering it with kerosene, or by feeding to hogs before the insects have a chance to escape. This should preferably be done about the middle of May, or before the larvæ have attained full growth. So far as known at present the insect infests no other fruit than the pear, and it ought not to be impossible for the fruit-growers around Meriden to practically exterminate this pest in a single season. In 1884, this remedy was tried on the Coe place, but the insect reappeared in the spring of 1885, in greater numbers than expected, which showed that the picking was not done as thoroughly as supposed, or was done too late, or else that the insect had gained a good foothold in neighboring orchards in which the picking was not tried. In a letter dated June 12, 1885, the Messrs. Coe give the result as follows:

> "Our method seemed to answer for all practical purposes, as they had not come this spring in sufficient numbers to do damage by diminishing the crops. This is the bearing year for our orchards, and the trees all blossomed abundantly. The insect confined itself to its favorite pear in the main. None were found in Anjou or Seckel and few in other varieties besides the Lawrence. The 125 trees of Lawrence had perhaps one-sixth of the fruit infested."

That this insect has been recently imported from Europe seems quite probable, for the following reasons:

(1) Until this insect was found upon the Coe farm, no insect of similar habits was known in this country.

(2) An insect of almost precisely similar habits and of identical appearance (except for certain discrepancies which can be explained away) has been described by European authors, and, as early as 1831, did considerable damage to the pear crop in parts of Europe.

(3) In 1884 Mr. Coe said that some seven years since he imported a large lot of pear stocks from France, upon which were grafted American pears; prior to that time he had never seen the insects. A year or two afterward they were first noticed, but in small numbers, and since then have been on the increase. Mr. Coe is the only one in his section of the State who has imported pear stocks, and his farm was the first, and for some time the only one, infested.

[This is an abstract of a paper by Prof. Riley which appears in the recent Entomological Department of the report of the United States Commission of Agriculture. Those who desire to pursue the subject critically will find much fuller details at pages 287 and 288 of the Report. It promises to be an insect that will eventually assert an importance equal to the Curculio among plums, or the Codling Moth among apples. Some of the reference marks on the cuts refer to an account more in detail, which appeared in the official Government publication.—Ed. G. M.]

REMEDY FOR THE POISON RHUS.

BY C. A. UBER.

I notice in January issue that Dr. Frank Jones considers a strong solution of bi-carbonate of soda the most efficient application for the cure of Rhus poisoning.

Nearly twenty years ago I was first poisoned while botanizing, and have been poisoned every year since, from one to four or more times. Of course were I to cease roaming around and remain at home I would escape, but I don't.

I have tried the above named remedy and numerous others, and now use exclusively a strong (saturated) solution of alum, which relieves me quicker than any other application ever did. I would remark that, as is well known, the Rhus affects different persons in different degrees, and some not at all; and I have thought it may also affect them in a different manner, as I have known several persons, one of whom would experience greater relief than another while using a similar remedy. Therefore all may not be so readily relieved by the application of the alum solution as myself and others to whom I have recommended it; but to all whom the soda bi-carbonate does not cure, I would say, try the alum solution.

Falls Church, Va.

BLOOMING OF THE SWEET POTATO IN NEW JERSEY.

BY W. F. BASSETT.

Several years ago, a friend in Vineland told me that his brother often had flowers on his sweet potatoes, but I never saw one until the summer of 1885, when Mr. D. Colwell had some plants which bloomed quite freely, and he informed me that those which produced flowers were obtained from another place (I do not remember where). Last spring I bought some seed potatoes from Mr. C., and among them I had several which flowered. The flowers were smaller than any common morning glory, I should say about an inch across, and white with rose colored throat. One theory is good until another upsets it, but it is quite evident in these cases that the peculiarities of the season had nothing to do with it, and that it was in the variety.

Hammonton, N. J.

HYACINTH BEAN.

BY P. H. O.

In the January number of the GARDENERS' MONTHLY, page 30, I find under "Scraps and Queries" that "Physician" wants to know the botanical name of this plant, on account of a case of poisoning. It is Dolichos Lablab with us in Texas, being planted by colored people to adorn porches and verandas, and sometimes by whites. It is, however, not poisonous, for the writer of this has frequently eaten, when wandering in the mountains, where some people cultivate it for that purpose, a mess of this very same Hyacinth bean, the young pods being prepared like snap beans, of which the taste is very much alike.

Austin, Texas, Jan. 7, 1887.

THE MELON PEAR.

BY A. M.

The "Melon Pear" referred to on page 24, January number, came to us a year ago in such a way that we were induced to catalogue it, and we give you briefly our experience. It looked tender, however, so we potted part of the stock, and on the plants thus treated quite a number of the "Pears" were produced, and although some of them ripened perfectly (under glass in the autumn), no person could be found who would eat them—a mere taste being sufficient for each. To the writer the flavor was unpleasant and nauseating.

Pittsburg, January 10, 1887.

EDITORIAL NOTES.

Hardiness and Temperature.—The GARDENERS' MONTHLY has shown often that hygrometrical conditions, and not temperature, govern the hardiness of trees. This fact, however, is but slowly recognized. Prof. Beal recently noted a good illustration at the college grounds at Lansing. He says:

"Last winter was as cold as any we have had in 20 years—33° F. below zero—yet thrifty sprouts of Magnolia umbrella remained alive to the terminal bud. Perhaps this was owing to the fact that there was plenty of moisture in the soil, or little wind or no sunshine during the freezing period, or all of these combined, or for some other reason not yet understood. These magnolias have usually, even in mild winters, died to the snow line."

Wattle Bark.—Wattle is the name given to different species used in tanning leather. It is said the production of wattle bark promises to become one of the most profitable industries of Australia.

Magnolia cordata.—Prof. Sargent has been over the route taken by Michaux in 1788-89, chiefly to try to find the original localities for Magnolia cordata, which Michaux is believed to have ardently searched for. But Prof. Sargent now believes that botanist was looking for Magnolia Fraseri. But so far as Magnolia cordata is concerned, Prof. Sargent could not find plants like the one known as such in gardens, and he is inclined to believe that it is only an extreme form of the common cucumber magnolia, M. acuminata.

The Lifting or Rising of Heated Atmosphere.—The "practical man" is often the true man of science, while he with the scientfic reputation is the one often to merit the contempt sometimes expressed for the merely practical. How this is exemplified a paper on "Climatology of the United States," read before the Essex Institute of Science, affords an instance. Prof. Kimball says, "Again we take the case of a great level plain heated by a summer's sun, till the air at some point commences to rise. As it rises, air will flow in from all sides, and will follow the upward current already created." This reads something like the story where the saucy domestic at once determined to leave, with her mistress' finger pointing to

the door. How anything can "rise" in opposition to the laws of gravitation is not clear. A stick at the bottom of a bucket will not "rise," but when you fill the bucket with water we find the stick at the top. Popular phrase makes it "rise," but the man of science should know better. It is gravitation acting on the heavier and plastic water that results in pushing the stick up. It does not really "rise," but is pushed up. It is so with all liquids, the heavier pushes the lighter out of the way. The "heated air commences to rise" only when heavier air—that is, cooler air—pushes against it on all sides. The cool air does not "follow,"—it drives the other ahead of it. We think gardeners understand this pretty well. It is at the foundation of hot-water heating.

Alcohol from the Prickly Pear.—Don Fernando de la Camara, a member of the Society of Natural and Physical Science at Malaga, has been experimenting for over a period of twelve years with this plant (Opuntia vulgaris), and has at length obtained results which may be regarded as being satisfactory. He states, in rocky ground at Malaga 2600 Figs, weighing about 13 kilos, are an average crop on 10 square metres, and the proportion of spirit obtained from the juice amounts to about 8 per cent.

SCRAPS AND QUERIES.

Dormant Bulbs.—Mr. W. C. Steele, Switzerland, Florida, writes: "In the spring of 1885 I planted a dozen bulbs of Milla biflora in the open ground. They all grew and bloomed finely. As most of such bulbs are hardy here in any ordinary winters, they were left in the beds. The unusually heavy freeze of January 9-12, 1886, destroyed six of the bulbs, the other six were moved in the spring and seemed to be all right. But as the season advanced, only one bulb showed any signs of growth; that one bloomed and ripened seed. A short time ago I dug it up and found it a large fine bulb. Strange to say, four out of the other five bulbs were still there and as sound as the day they were planted, having lain perfectly dormant for over a year. How do you account for this?"

[We could only answer, that vital activity varies in different individuals, and yet we are conscious that it is an explanation that does not explain. Yet we see the fact everywhere in nature. A transplanted tree does not push into leaf as soon as one not transplanted. Some transplanted trees indeed will remain a whole season and not push into leaf until the next year. This is especially true of the Ash family; and even as regards bulbs, a quantity may be planted together, all set the same depth, and all apparently with the same conditions about them, yet they will not all appear at the surface at the same time. We are accustomed to say that those which appear first have the greatest vital activity; but just what influences this latent power for active life, we suppose no one knows.—Ed. G. M.]

A Terrible Rose Fungus.—W. H. T., Montgomery Co., Pa., writes: "Will you please tell me, if possible, through the MONTHLY, what is the cause of, and how to prevent my rose bushes from dying? I send you two plants to show you how they look. They are planted in a solid bed on the ground, and have good drainage."

[The edges of the leaves are brown and in many cases all brown and falling off. It was evidently the work of some root fungus which had permeated the whole plant. Examining the roots we find them a whole mass of granules, similar to that resulting from the Phylloxera on the vine. We do not, however, find any trace of insect life in them. We will hold them for further examination and report hereafter.—Ed. G. M.]

Acclimatizing Plants.—Mr. Green observes in regard to a note of the Editor: "You consider it established that trees, etc., may become acclimatized, yet the able and practical president, T. T. Lyon, took the writer to task for preaching such a doctrine in a paper before the American Pomological Society at the last meeting. I believe the old Brinckle's Orange Raspberry is becoming more hardy. It often endures the severe winters at our farm, which has the reputation of being more exposed than any other hereabout. But it is the work of ages in most instances to acclimatize a plant or tree."

Yucca Paper.—Mr. A. A. Dance, Argyle Lodge, Bournemouth, England, desires the address of any firm in America, making paper from Yucca. There was one in Denver, Colorado, a few years ago, probably there still.

The Mistletoe in Florida.—Mr. W. C. Steele, Switzerland, Florida, says: "Mistletoe is quite common here. It grows most abundantly on the hickory and water oak. It is also found on the common native persimmon, the wild cherry, prunus serotina, the prickly ash, and in one instance on a wild plum, prunus umbellata. Though found in large masses on other trees standing among live oaks, I have never seen a single specimen of mistletoe on a live oak."

THE MISTLETOE IN CALIFORNIA.—Mr. Lester says: "As the mistletoe subject is not yet exhausted, allow me to say I found it very plentifully in 1870, high up on large oak trees in the neighborhood of Saratoga, Santa Cruz Co., California, also in the year after on low scrub willows on Mormon Slough, in San Joaquin (pronounced wakeen) Co., in the same state. Both places are about an equal distance from San Francisco, in a different or opposite direction.

HOST PLANTS OF THE MISTLETOE IN ENGLAND.—Mr. James M. Pulley, Boston, Mass., writes: "Seeing you are interested in the host of the mistletoe, I beg to add my mite. I have seen the parasite in England growing on the poplar, linden, apple hawthorn, maple and pear. On the poplar, apple and linden many times, on the hawthorn several, and on the maple and pear a solitary instance each."

TRAILING ARBUTUS.—"Virginia:" We believe it is conceded that an ancient Roman would have pronounced the word with accent on the first syllable, but custom with the English speaking people has placed it upon the second, and "it is custom gives law to language." It would be no use to try to change it now. As to culture, it is conceded to be difficult to transplant, but this is probably because it is forgotten that its leading root fibres are near the surface. If planted where an abundance of light, sandy soil can get in among the fine fibres, it will perhaps do better.

BLACK SPOT ON ROSE LEAVES.—"Constant Reader," Hoosick Falls, N. Y., writes: "I am very much troubled of late with the above mentioned attacking the leaves of my American Beauties and taking the vitality right out of them—thereby rendering the blooms very unsatisfactory. And I perceive it is spreading to some Bennetts planted close by. It is to me a new enemy in the cultivation of roses. Would like to hear from some of the readers of your valuable paper on the subject—more especially Peter Henderson or some of the noted rose growers."

[This matter was very ably discussed by a number of the noted rose growers of America at the florists' convention last summer. Every one of them had positive opinions of his own, but according to our observation, no one succeeded in convincing the others that they were wrong in their views. The only facts on which there seems to be no disagreement are, that the trouble comes from the work of a minute parasite fungus; and that this fungus is a new-comer among rose growers.

The drift of the discussion indicated that most of the noted growers believed bad treatment started the fungus on its work. Rain water, hard water, cold currents, too low temperature, too much forcing causing lack of vital power to resist attack, bad soil, and many other things, that might bring about this growth, were offered as guesses, but nothing more.

It may be conceded, we think, that fungus parasites do not readily grow on vegetation unless vegetative power is not at its best,—hence the protection must be sought for in obeying those laws of plant-life in our treatment that tend to healthy vegetation. Fungus, however, may be destroyed. It is known that oil, sulphur and salt are all enemies of fungus growth, and, if one is chemist enough to know how to help an atmosphere in its oxygenic particulars, some good might be obtained from this great enemy of fungus also.

Now all these are ascertained facts, and it only remains for some genius to put them into such shape for practical use, that he who runs may read, as the Scriptures say.—Ed. G. M.]

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

NOTE ON THE GARDENS OF WILLIAM M. SINGERLEY.

BY JOHN WOODING.

Having been invited several times during the past five years to pay a visit to a gardener friend who lives in Montgomery county, I found a chance recently, and was met at the station by my friend. After a pleasant drive of six miles along the Norristown and Doylestown pike, on a pleasant morning, through an open-looking country, a house and a barn here and there along the whole line, we passed an old Quaker meeting-house, probably built in William Penn's time. The

end of the journey was the farm of Mr. Wm. M. Singerley, the well known proprietor of the Philadelphia *Record*. The estate is called The *Record* Farms and Conservatories. Mr. Thomas Foulds is the gardener, and one of the most obliging and good-natured fellows one can find.

Everything is new and as clean as a paper of pins. It is situated on a natural eminence. Everything is seen to advantage. There is the finest group of well and conveniently constructed greenhouses, and of as novel design as can be found in this part of the country. The architect is Mr. Willis G. Hale, of Philadelphia. They are all filled with a fine, healthy looking lot of different kinds of plants. Every house is especially adapted for different subjects. All the best varieties of roses are grown—from Her Majesty to American Beauty down. The rose-house I presume to be about 60 feet long, with a bed down the centre, paths all round, and side-benches three feet wide, which hold about eight inches of soil planted with roses. This is as it should be. No half-way business will do in this matter, if you want roses up to the mark. A grapery has been built lately, designed by Mr. Foulds. It is divided into three sections, arranged so as to prolong the fruiting season—namely, First Early, Intermediate, and Late. The vines were planted last April. They have made a remarkable growth, and the canes are ripening finely. There is a stove-house in the centre of the group, built higher than the rest, which is full of decorative and exotic plants. Carnations and Bouvardias are grown very extensively here, and are of the finest quality. The house is excellently adapted for them, having all the light possible. Lemons and oranges are also to be found here, full of fruit, growing in 14-inch tubs. One of the finest plants of the kind I have seen for some years, and in as fine and healthy a condition, is an Allamanda Hendersoni, growing up the rafters of the greenhouse. It is planted out in the open ground, and bore a profusion of large funnel-shaped yellow flowers. This plant, being a native of Brazil, requires a warm, moist situation. Apricots, Peaches, Nectarines and Figs are found.

Strawberry forcing is also a specialty with Mr. Foulds. At this date, November 21st, I noticed fine ripe berries of the Cumberland and other varieties in different stages of advancement. I suppose four or five hundred plants in all, in 6-inch pots.

A large number of bedding plants are grown here. Mr. Foulds informed me that he planted out about 30,000 last season. The lawn slopes gradually to the south, diversified with trees and choice shrubbery, and many intricate designs of carpet bedding.

A spacious kitchen garden is enclosed by stone walls, and furnished with substantial pits for forcing vegetables.

A grape arbor, of choice varieties, shades a centre walk, running 300 feet from north to south. Strawberries and other fruits in variety.

Gardener's Accommodations.—The gardener's cottage at this place is of a beautiful design and finish, consisting of eight rooms, all large and convenient. It has a hall-way six feet wide and stairs in centre. It is a frame cottage, painted light and relieved by darker colors. Mr. Singerley evidently did not forget to provide comfortable quarters where a gardener, as well as another man, can live and die happily. Gentlemen's places are rather few and far between in this section, and you would suppose gardeners, too, but my friend drove me to a place about two miles from him, owned by a Philadelphia family named Gilbert. This place is about two miles from anywhere, but it is a very nice, retired part of the country; it is for sale, the owner not taking much interest in it. It is well shaded, and has a splendid variety of evergreens, and there are two fair-sized greenhouses, and a gardener who has lived there 14 years. They say, "Birds of a feather flock together." I was surprised to meet two or three other gardeners there, from a distance, with horses and carriage. They make a practice of meeting at each other's places every week or so. Some of them were musical gardeners, who sang and played on the piano. Moody's and Sankey's hymns were sung, it being Sunday; but I guess on any other day they sing, "Drive dull care away," for I must say they were the most jovial and good-natured lot of fellows I ever met, and as happy as sand-boys. They all hoped they would see me again some day, and I hope so too, for a more pleasant time I have not spent for many a long day. *Pencoyd, Montgomery Co., Pa.*

EDITORIAL NOTES.

GRAMMATICAL ERRORS.—We do not know that the haste with which a magazine has often to be gotten out is any excuse for errors of this character. One of our correspondents points out that the gender of Setaria viride, at page 15, is wrong, it should be Setaria viridis; and the orthography of Ribes oxycanthoides should have been R. oxyacanthoides.

CLOVER AND GRASS SEED.—The English market is largely supplied with these from the United States.

U. S. DEPARTMENT OF AGRICULTURE. SUB-DEPARTMENT OF POMOLOGY.—A new sub-division was made last year in the interests of fruit culture, to be known as the Division of Pomology. Mr. H. G. Van Deman, formerly of Geneva, Kansas, has been placed in charge of it, and recently entered on the active duties of his office. He will be very thankful to friends who may communicate to him facts in relation to his subject that may come under their observation. Fruit culture or notes on new or old fruits, or anything bearing on the topic will be highly appreciated.

THE VIOLET, NAPOLEON'S FLOWER.—A pamphlet of the year 1815, which the *Temps* has recently discovered, gives an account of how the violet became the emblem of imperialism in France. Three days before the embarkation for Elba, Bonaparte, accompanied by the Duke of Bassano and General Bertrand, took a walk in the gardens of Fontainebleau. He was still wavering whether he should quietly resign himself to his banishment. The Duke of Bassano tried to point out to him that the time for withdrawal was past. Greatly excited, Napoleon walked on without speaking, trying to divert his thoughts from the subject. Suddenly he saw close to him a pretty child of three or four years of age picking flowers and tying them in a bunch. "My little friend," said the Prince, "will you give me your flowers?" "Yes, gladly," said the boy, and handed them gracefully to him. Bonaparte kissed the child, and said, after a few minutes, to his courtiers: "The accident of this occurrence is a secret hint to me to follow the example of these modest flowers. Yes, gentlemen, henceforth the violet shall be the emblem of my wishes." "Sire," replied Bertrand, "I hope for your Majesty's glory that this resolution will not last longer than the flower from which it takes its origin." The next day Napoleon was seen walking about the gardens with a bunch of violets, which he carried alternately in his mouth and hand. Stopping at a flower bed he stooped down to pick some flowers. The violets were rather scarce on the spot, and the grenadier Choudieu, who was on guard, said to him, "Sire, in a year's time it will be easier to pick them; they will then be more plentiful." Bonaparte, greatly astonished, looked at him. "You think, then, that next year I shall be back?" "Perhaps sooner; at least we hope so." "Soldier, do you not know that after to-morrow I start for Elba?" "Your Majesty will wait till the clouds roll by." "Do your comrades think like you?" "Almost all." "They may think it, but may not say it. After you are relieved go to Bertrand and let him give you 20 Napoleons d'or, but keep silence." Choudieu returned to the barracks, and drew the attention of his comrades to the fact that for the last two days the Emperor had been walking about with a bunch of violets. "We will call him among ourselves Pere la Violette." From that day forth Napoleon was only called by that name in the barracks. By degrees the secret reached the public, and in spring the adherents of the ex-monarch carried the flower as a memorial either in their mouth or in their buttonhole.—*Pall Mall Gazette.*

ISOLATED ENGLAND.—A French writer in a Belgian publication, makes great fun of the weight and measures he finds among the florists and gardeners in Covent Garden market. He says you are told that the articles are so much per seive, per pottle, per handful, bundle, bunch, or pound—and even when you want to buy by the pound, you have to come to an understanding whether you are to buy by Troy weight, Dutch weight or avoirdupois weight. He finds the desire for a metric system there weakening every day, through a fear that the introduction of any foreign notion will endanger the British constitution. They even refused to have a tunnel under the British channel, for fear Bonaparte might walk in some night and run off with Queen Victoria; and it is for this reason that there is and always will be a jealousy of everything foreign, no matter how useful it may be proved to be. After all the joking there may be sound national policy in such a view from a small island like Britain.

ORIGIN OF THE NOISETTE ROSE.—We do not know that Philip Noisette, the Charleston florist, who in 1815 sent plants to his son, Louis Noisette, in France, ever had any more idea of its origin than that it was an accidental production,—but Boitard in his *Manuel Complet de l'Amateur des Roses*, published in 1836, states, though probably a mere supposition, that it was a cross between Rosa indica and Rosa moschata.

VIRGIN'S BOWER.—One of the misfortunes of English names to plants is, that those who use them, in time drop them for others. There is nothing stable about them. We are reading an excellent paper in an English publication, on their wild clematis—Clematis Vitalba, and a full list of the common names is given. We have Travellers' joy and Old man's beard among them. Yet the last is a comparatively new name, while the good old one of "Virgin's Bower" is omitted.

MODESTY AND TAXATION.—In America a man is "assessed,"—in England he is "rated," and the *Gardener's Chronicle* says:

> "American nurserymen, it is alleged, cannot understand why their British colleagues should complain about being over-rated. Americans are not quite so modest, but perhaps they do not realize that taxes follow on this sort of appreciation on this side of the Atlantic."

And after all it is about the same here,—a man is not much appreciated unless he has something worth taxing.

DAVID DOUGLAS.—Every plant-lover has heard of Douglas. His name has been given to numerous pretty flowers, and the Douglas Spruce has given him a great name among those with whom even a love of flowers is unknown. The portrait here annexed is from the *Gardeners' Chronicle*. He was born in Scone, in Scotland, and studied gardening in the nurseries of Messrs. Brown, at Perth, and later in the Glasgow Botanic Gardens, when Mr., afterwards Sir William, Hooker, was Director. In 1823 he was engaged by the Royal Horticultural Society to collect plants and seeds in North America, and he particularly distinguished himself by his work on the Pacific coast, especially in the region of the Columbia River. In a second trip he visited California. In 1833 he left California for the Sandwich Islands. They have a plan to trap wild animals by digging a pit, and covering loosely. The creatures break through and cannot escape. Douglas fell into one of these, in which a wild bull had been already captured. He was torn and trampled to pieces by the infuriated beast. He was one of the most energetic and successful of plant collectors.

PROFESSOR WILLIAM SAUNDERS.—This gentleman, Director of the Experimental Farms of the Dominion of Canada, has returned from his Western explorations in the interest of agriculture, having extended his observations to Vancouver Island on the Pacific coast. He reports Manitoba as flourishing in spite of the unusually dry season. Settlements are starting up even to the foot of the Rocky Mountains. Cattle feed out to the end of November. In British Columbia settlers are locating faster than farming provides for them, so that a large portion of the supplies has to be brought from a distance. Timber and the fisheries will be productive industries for ages. Banff, on the Bow River, is prosperous. A large hotel is forming, and the Government laying out a beautiful Public Park. The Western Indians seem contented and happy.

GENERAL W. H. NOBLE.—The *Rural New Yorker* gives a likeness and biography of this gentleman, whose excellent papers on landscape gardening and kindred topics have often interested our readers. He was born August 18th, 1813, and educated at the Military Academy at Middletown, finally graduating from Yale. He was admitted to the bar in 1836. In 1862 he became Colonel of the 17th Connecticut Volunteers, and entered the war for the Union. He was severely wounded at Chancellorsville,—but he recovered time enough to take part in the battle of Gettysburg. He was captured in Florida, and went to Andersonville prison. He was mustered out of service with the title of Brigadier-General at the conclusion of the war. While still practising law, he devotes his leisure time to his favorite gardening tastes at Bridgeport, of which city he has been Common Councilman, and Chairman of its Board of Park Commissioners. Notwithstanding he is in his 73rd year, we should judge by his portrait he is a hale and well-preserved, tall and somewhat thin gentleman.

THOMAS MOORE.—This well known English horticulturist died suddenly on January 1st, in his 65th year. Possibly no man ever did so much for horticulture in the old world. When the writer of this knew him, he was a foreman of the herbaceous plant department of the Royal Botanic Garden, Regent's Park, London, where he fixed that love of botany in connection with horticulture, that made his subsequent career so useful. He was from the first co-editor with Dr. Lindley, and subsequently until recently with Dr. Masters in the *Gardeners' Chronicle*, one of the editors of the *Treasury of Botany*, author of a work on Ferns, and in some way or other with most of the leading literary enterprises connected with gardening. For many years and until his death, he was curator at the Apothecaries' Garden, at Chelsea, a position once held by the famous Philip Miller.

SHEPPARD KNAPP.—The New York papers announce the death of this gentleman, who, over a quarter of a century ago, was eminent as an amateur horticulturist, and was president of the New York Horticultural Society at that time. He had a fine country seat at Babylon, Long Island.

PROF. ALPHONSE DE CANDOLLE.—Looking at the MSS. from which the note in our last was made, it seems to be 87, but a correspondent who is certainly well informed on the age of Prof. De Candolle, says it should be 81, not 87.

DR. H. H. RUSBY.—This intrepid botanist, well known in New Mexican, Arizona, and other explorations, has reached Para safely, having descended the Amazon in canoe for the distance of 3500 miles. The details of this wonderful journey will be looked for with great interest.

PINNEY'S NURSERIES AT STURGEON BAY.—The Sturgeon Bay (Wis.) *Advocate* refers in complimentary terms to Mr. Pinney's efforts to start his nursery there. He commenced in 1864, and now has a very large trade, and it is increasing heavily from year to year.

J. R. & A. MURDOCH.—This long established and well known firm has hitherto consisted of John R. Murdoch, Alexander Murdoch, James R. Murdoch and David B. Murdoch. The last named now retires, and the old firm will continue business as usual.

TRANSACTIONS OF THE WORCESTER CO. (MASS.) HORTICULTURAL SOCIETY.—From Edward W. Lincoln, Sec., 1886. This society has a very prosperous library, standing next to the Massachusetts Horticultural Society in this respect, and the society on the whole seems prosperous.

PEACH CULTURE.—By John Willcox, Bridgeton, N. J. This is an essay of 80 pages, proposing to give a "complete treatise" on the subject. We can only say of this as of similar efforts professing to be drawn from practical experience, that it possesses great value from that fact,—and yet probably no two leading growers would wholly agree with it. Each in his own way has some which he regards more essential than other people's notions. Editors, who have to sink their own personalities and act as judges, have to wonder what other people would say in these cases, rather than have any say of their own. Here, for instance, is the opinion given that "in Tennessee the yellows are unknown." Then comes the opinion that the disease known as yellows is not a disease, but simply the result of starvation. Is the soil never exhausted, or is there no starvation in Tennessee? We only offer this as an illustration as to how there will be differences where mere "opinions" are at stake,—but this will not in the least detract from the value which such a volume of practical matter offers to the average peach grower.

APPLE CULTURE.—By L. H. Bailey, Jr., New York, Orange Judd Co., 1886. This is a brief essay of 90 pages giving apparently the experience of the author and his father, and as the result of such experience has a value that will be always appreciated. Aside from this we fancy most experienced orchardists would cordially endorse the teachings of the author. Yet we fancy that if this essay were read before one of our leading pomological societies it would meet the usual fate of prolonged discussion on many points. For instance, the expression "cold and backward soils, even if well under-drained, do not give good results. I am not to be understood as discouraging tile drainage, but I prefer a soil naturally well drained to one tile drained." The inference from this would be that one had no alternative but tile draining or high lands. The fact is that some of the most successful orchards in Illinois and other places are on land where water would stand all winter. But the land is plowed up into ridges, and the trees planted on these ridges. It is much cheaper and far more effective than under-draining, and the trees do much better than on high land where the fertilizing materials are washed to the lowlands with every rain.

We are not so sure either that the men who steal apples are usually those who have never been to Sunday-school,—a statement the author himself seems to doubt in another place where he intimates that college boys are more likely to steal from a disagreeable old curmudgeon, than from a smilingly affable orchardist. We take it for granted that most of the collegians had been or are Sunday-school boys. Still, the experience of a successful cultivator is not to be judged by a few weak points which all experiences have.

DRUGS AND MEDICINES OF NORTH AMERICA.—Cincinnati, J. N. & C. G. Lloyd. The September number gives an exhaustive account of the Magnolia in the United States. There is a map showing the geographical distribution of the genus. The histories are fully given, the drugs, and the generally useful purposes the trees serve. The frontispiece is of Magnolia macrophylla,—at least given for that, but is evidently M. Fraseri, given by mistake. M. macrophylla is more than double the "natural size" as given here, the petals are rounded, and the auricles to the leaves not long and slender as given here. The Papaw is also illustrated and historied.

THE FLORAL CABINET.—And now we have another sacrifice to chronicle. The *Floral Cabinet* has been devoured by the *American Garden.*

THE GARDENERS' CHRONICLE.—This excellent English weekly, after forty-five years of service, has lowered its price and decreased in size. We are sorry, for there was never too much to read, the matter was always so good.

CATALOGUES.—Berger, H. H., & Co., Rare Japanese Plants, San Francisco, Cal.; Dreer, Henry A., Preliminary Trade List, Philadelphia, Pa.; Ellwanger & Barry, Circular of New Things, Rochester, N. Y.; Haynes, J. H., Itasca Strawberry, Delphi, Ind.; Landreth, D., & Sons, Seed Catalogue for 1887, Philadelphia, Pa.; Phœnix, F. K., & Son, Nursery Price Lists, Delavan, Wis.; Plant Seed Co., Seed Catalogue for 1887, St. Louis, Mo.; Schmidt, J. C., Garden and Flower Seeds, Erfurt, Germany; Thorburn, Jas. M., & Co., Seed Annual, New York City, New York; Vick, James, Floral Guide, Rochester, N. Y.; Williams, B. S., Flower, Vegetable and Agricultural Seeds, Upper Holloway, London, England; Young & Elliott, Seed Catalogue for 1887, New York City.

SCRAPS AND QUERIES.

PATENTING FRUITS.—Mr. Charles A. Green says: "You ask for suggestions relating to the protection of originators of new fruits. The Niagara Grape Co. has solved the question, having shown one way to secure protection which has proved successful as they practice it. But why not patent the new fruit, much as other affairs are patented? Then individuals would be granted rights to grow only, others to grow and propagate; all restricted by the originator. It would cause inconvenience and annoyance perhaps, but it would not be compulsory on any one to be thus inconvenienced, and the prime object would be attained. Prof. Beal can distinguish varieties by the blossoms in many cases."

COL. WILDER'S DEATH.—A Virginia correspondent writes: "The decease of our honored president, Marshall P. Wilder, is very depressing, and is to be as deeply deplored as that of any of our recently deceased statesmen, for his influence for the good and beautiful was as great as that of any."

LOVERS OF ROSES.—A distinguished English clergyman writes to a local paper to regret that just in proportion to the spread of a love for roses among his congregation, he notices a corresponding emptiness of pews in his church; but for the life of us we cannot see the connection between the two circumstances, or why he should introduce the subject in that light.

THE HONOR OF NURSERYMEN.—Mr. Green in a note to the Editor, says: "You uphold the integrity of many men in the trade whose statements you state can be relied upon, though they are pecuniarily interested. It is a direct insult to intimate that, as a rule, men should be mistrusted when thus speaking or writing. Indeed, so far has public opinion been influenced by editors and others who attempt to bolster their own reputation by running down the opinions of men in trade, many are so sensitive they will not speak or write of affairs liable to be thus criticised. Trade journals are mentioned with a sneer, yet are not Harper's and Lippincott's publications trade journals? Should their utterances receive less weight on this account? No, 'A man's a man for a' that,' and should pass for actual worth on all occasions."

A TREATISE ON CHRYSANTHEMUMS.—A Connecticut correspondent says: "I have Burbidge on Chrysanthemums. It looks good. So much is said about these plants, and so much interest taken in their growth, that it seems to me an article (perhaps more) on their culture, management, etc., from some of the leading growers, would be of great interest to many readers of the MONTHLY. An English book deals with it in a different climate, and is not really authority for this country."

HORTICULTURE IN SCHOOLS.—A Rochester correspondent remarks: "Allow me to call the attention of your readers to the importance of teaching horticulture in the public schools. Denominations say, 'Let us have the children to direct. We care not who has them when grown. We will conform them to our views.' What an opportunity we have here to make intelligent horticulturists! Every well-informed pomologist should give practical talks at least once a year in the public schools."

[The Editor of this magazine has been for four years Chairman of the Committee on Schools of the Common Council of the City of Philadelphia, and has had, in this capacity, the general oversight of expenditures for the education of over 100,000 children, involving a cost of about $2,000,000,—and this has afforded him ample opportunity for testing innumerable theories advanced in regard to the public school system, and he is convinced that the greatest danger to the public school system comes from the probability of its breaking down by its own weight. A certain amount of taxation must be endured in order to govern a community,—but there comes a time when the limit of taxation must be reached, and when nearing this, how to raise the money becomes a greater question than what to do with the money. This is fast getting to be the trouble with the public school system. Imagine a city like Philadelphia paying one-fourth of its available income for public education. That is what it is doing,—yet there are continual efforts to engraft horticulture, botany, cooking, sewing, the mechanic arts, and numberless other very useful things on to this public system. The advocates of every one of these progressive movements contend that they will not add any more to the cost of teaching. We find by experience they do so; in brief, we have to come down to this question of teaching horticulture in schools that though the good that would come from it is unquestioned, the Editor is compelled to believe that society cannot afford to do it out of taxation. It is one of those things best left to private enterprise,—or even charity, if we care to put it in that shape.—Ed. G. M.]

* * *

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

MASSACHUSETTS HORTICULTURAL SOCIETY FOR THE COMING SEASON.

BY E. L. BEARD.

The schedule of prizes of the Massachusetts Horticultural Society, offered for the year 1887, has just been issued. Nearly $7,000 are offered, which is the largest amount appropriated for many years. Of this amount $3,500 is appropriated for plants and flowers, $2,200 for fruit, and $1,000 for vegetables. In addition to these prizes are a large number of special prizes, offered by individuals for various classes of fruit and flowers. One of the most notable of the latter is the series of gold and silver medals offered by the General Union of Holland, for hyacinths, tulips and narcissus, to be competed for at the March exhibition.

The prizes for Roses in June amount to nearly $500, and the prizes for Chrysanthemums have been largely increased, the highest prize for the latter being $100 for 20 plants in pots, with a second and third prize of $75 and $50, and about $400 are offered in addition for other classes of Chrysanthemums in pots.

The most notable horticultural event of 1887 will be the annual exhibition on the 13th, 14th, 15th and 16th of September.

This exhibition will be held in connection with the annual meeting of the American Pomological Society, and the immense hall of the Mechanics' Association has been secured in order to make an adequate display of the fruits which will be brought from all parts of the United States, and the collections of rare plants and flowers exhibited under the auspices of the Horticultural Society. The latter society offers, in addition to its regular fruit and flower prizes at this show, the sum of $500 to be competed for by pomologists, competition being open to States, societies, granges, firms and individuals throughout the United States and Canada. Three prizes of $100, $50 and $25 are offered for the best general display of fruits of all kinds. Three prizes in each instance are offered for the best collection of apples, pears, peaches and native grapes. Three prizes of $20, $15 and $10 are offered for the best collection of Russian apples and seedlings therefrom. Large prizes are also offered for the best collection of plums and sub-tropical fruits. The complete schedule of the society can be had from Robert Manning, Secretary of the Massachusetts Horticultural Society, Boston.

Boston, Jan. 4, 1887.

A CHRYSANTHEMUM CLUB.

BY C. B., HARTFORD, CONN.

Last Spring I interested our parish (of Trinity Church) in this city, in giving a Chrysanthemum show. Forty of us (they were mostly women) each bought ten plants (about one hundred varieties), and grew them through the summer, and the second week in November we held our exhibition. The florists of the city were asked to join us, which they did, and the display was a creditable one. It was understood at the beginning that the money obtained was to be given towards building a hospital at Helena, Montana, and we had the pleasure of sending them over $300.

STATEMENT TO THE CHRYSANTHEMUM CLUB.

Received from admittance		$229 65
" " sale of plants		118 19
" " cut flowers		74 06
" " lumber		10 50
		$432 40
Paid for music	$18 00	
" " hall	15 00	
" " cartage	15 95	
" " signs, etc	6 56	
" " labor	5 50	
" " lumber	12 44	
" " printing	6 35	
" " load of trees	3 00	
" " booth	6 00	
" " cut flowers	10 00	
Expenses paid Mr. May	3 00	
Paid for sundries	2 94	
		104 74
Net proceeds of exhibition		$327 66

THE CHRYSANTHEMUM SHOW.

BY ONE WHO LOVES CHRYSANTHEMUMS.

Chrysanthemums are so popular that a few remarks respecting them may not be out of place. The late Philadelphia show, at Horticultural Hall, is conceded by all to have been the largest and best ever held in the United States. Even New Yorkers concede the palm to Philadelphia. These plants have been extensively cultivated the last five years, and every season brings better plants. It is not necessary to relate here the successful exhibitors and premiums awarded, as that is already known through the daily papers, which took a great interest in the show, and deserve the thanks of the Horticultural Society, for seconding the popular interest in the matter from day to day.

I am glad to hear the show has been also a great success financially. I think Chrysanthemums are come to stay for some years. They have been in cultivation for two hundred years in the old country, and they may continue here for a long time, as everybody is getting interested in them. Shows are starting up in different parts of the country, and I believe in course of time every place of any importance will have its Chrysanthemum show.

I believe the premiums awarded gave good satisfaction. It is a difficult matter for judges to decide on the best plants and equally the best flowers among so many. I never saw such gigantic plants grown as some of them were, especially on single stems. It seems the single stem method of culture is very satisfactory. In the cut flower department some extra large and superior blooms were shown, and some new introductions from last season, of which I here make note: Bicolor, Mr. J. Thorpe, Tubiflora, Robert Bottomly, Lady St. Clair, Lord Wolseley, S. Lion, Mabel Ward, Soliel de Levant, Mrs. F. Thompson. The competition this year was very keen. Everybody did his level best to beat his neighbor. One exhibitor says he will have them six feet through next year.

In looking over the schedule of premiums offered for these plants, I notice only 167 for gardeners, in what is termed the Amateurs' List. I think this ought to be called the Gentleman's Gardeners' List, as a professional Gardener is no Amateur. As the show has been such a success, I think there ought to be a few more sections in the schedule next year, and more premiums in money for Gardeners, who contribute the biggest share to the show. In looking over the premium list for Florists, I find $565 offered,—a large sum compared with Gardeners'.

In regard to the culture of the Chrysanthemum, some advocate starting the cuttings in November, others in February or March. I believe in the former as the best time, and with good management they will make larger plants than if the cuttings are started at the latter period. There are different methods of culture,—some plant them out in the open ground in May, and lift them in September. Others grow them on continuously in pots. I am told some of the largest plants on exhibition were pot grown, and were exhibited in 14-inch pots. They will, perhaps, have them in tubs next year. This plant is evidently a very gross feeder, and will stand any amount of stimulants previously to showing buds. After that, watering once a week with cow manure water will be ample. Mr. John Thorpe, of Hallack, Son & Thorpe, advocates in their catalogues watering six or seven times a day during the summer months. I beg to differ with him there. I never watered them or any other plant above twice a day, which I consider quite necessary. I do not believe in giving a plant water when it is not dry. Probably Mr. Thorpe is like the proverbial minister, who was charged with doing something unbecoming a minister, and who replied, " Don't do as I do, but do as I say."

In preparing plants for exhibition, they require a good deal of time and attention,—more so than some Gardeners can give them, who have so much other work to do. I noticed some plants with a stake to every flower—in fact, a pot full of sticks. I think they look quite as well grown in a more natural manner, about three or four stakes round each plant,—but it is necessary to have them to perfection both in foliage and flowers, else stay at home in future.

[The suggestion in regard to the Amateur Class is a very good one. In all well ordered institutions, it is customary to separate those who keep Gardeners to look after fruit, vegetables and flowers, from those who grow their articles wholly by their own hands. The reasons for this are obvious. The smaller amateurs, who keep no gardeners, have seldom the chance to compete with the others, and yet they are a class of flower-lovers all desire to encourage.—Ed. G. M.]

EDITORIAL NOTES.

Pennsylvania Horticultural Society.—Arrangements are being made for the coming fall to eclipse all former Chrysanthemum exhibitions. Six hundred dollars have already been subscribed for a premium in one class, in which the first premium will be $300. Some of our lady amateurs are taking a live interest, and will offer valuable vases as premium articles. Mrs. Geo. W. Childs, Mrs. Charles Wheeler and Mrs. Hennessey have signified their desire to offer these inducements to lively competition.

The Massachusetts Horticultural Society and Col. M. P. Wilder.—The Massachusetts Horticultural Society, at its meeting on the 1st of January, paid due honor to the memory of their esteemed associate, Col. Wilder. The leading members each paid a warm tribute. The remarkably youthful trait which he carried with his years, to which we alluded in our notice, was particularly dwelt on by Mr. Robert Manning, who concluded his remarks by observing :

"One of Mr. Wilder's most prominent characteristics was the perpetual youth which, in spite of the infirmities of age, he carried with him, and which led Governor Long, in his speech at the meeting of the American Pomological Society in this city in 1881, to speak of him as at once the oldest and the youngest man in the State. This had been attributed to his love for rural pursuits ; but the speaker thought it due rather to his kind and loving heart, continually overflowing with regard to every one, so that they who had known him but a short time, felt that in his death they had lost a dear friend." This thought, the speaker said, had been better expressed in Whittier's lines, with which he closed :

"To homely joys and loves and friendships
Thy genial nature fondly clung ;
And so the shadow on the dial
Ran back and left thee always young.

* * * * *

Thy greeting smile was pledge and prelude
Of generous deeds and kindly words ;
In thy large heart were fair guest-chambers
Open to suurise and the birds.

* * * * *

O friend ! if thought and sense avail not
To know thee henceforth as thou art,
That all is well with thee forever
I trust the instincts of my heart.

Thine be the quiet habitations,
Thine the green pastures, blossom-sown,
And smiles of saintly recognition
As sweet and tender as thy own.

Thou com'st not from the hush and shadow
To meet us ; but to thee we come.
With thee we never can be strangers,
And where thou art must still be home !"

Founding of the American Pomological Society.—Col. M. P. Wilder, writing a few days before his death, to Mr. Charles A. Green, editor of the *Fruit Grower*, said :

"In regard to the origin of the American Pomological Society, the Massachusetts Horticultural Society, (of which I was then president,) in 1848 authorized me to correspond with societies and pomologists in other states, and if approved by them, to call a National Pomological Convention in the city of New York, which was held in October of that year. This meeting was styled the American Congress of Fruit Growers, and was held under the auspices of the American institute. This was the first National organization of the kind. It created a new interest in pomological research throughout the country, which has been constantly increasing since. The next year another organization, the North American Pomological Convention, was united with this, and the combined societies in 1852 took the name of the American Pomological Society. The first officers of the American Congress of Fruit Growers were Marshall P. Wilder, President, and Samuel B. Parsons and Patrick Barry of New York, and Geo. W. Deacon of New Jersey, Secretaries, with a Vice-President from each of the States represented, only one of whom, H. W. S. Cleveland, now of Minneapolis, still lives. The second meeting was the next year in New York, and the third at Cincinnati in 1850, since which time they have been held bi-ennially in the leading cities of the North, South and West, and its next meeting is to be held in Boston, in September, 1887. It should here be remembered that among its most distinguished Pomologists of its early history were A. J. Downing, his brother Charles, Dr. W. D. Brinckle of Pennsylvania, J. J. Thomas and George Ellwanger of New York, Dr. John A. Warder of Ohio, Charles M. Hovey, Samuel Walker and Robert Manning of Massachusetts."

JESSIE STRAWBERRY.

A SEEDLING OF SHARPLESS, OFTEN MEASURING NINE INCHES AROUND. FEW SMALL BERRIES. NO LEAF BLIGHT. REMARKABLE FOR QUALITY, BEAUTY AND PRODUCTIVENESS.

F. A. STECHER LITH. ROCH. N. Y.

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

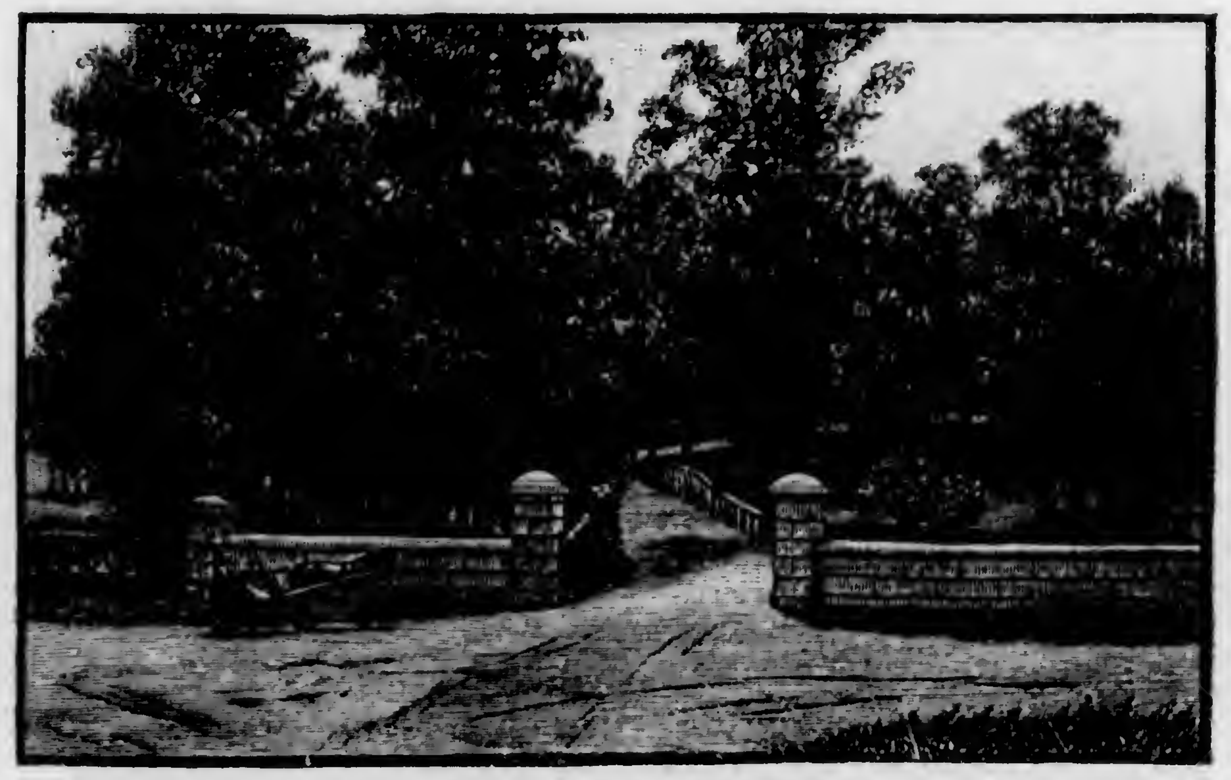
VOLUME XXIX. MARCH, 1887. NUMBER 339.

FLOWER GARDEN AND PLEASURE GROUND.

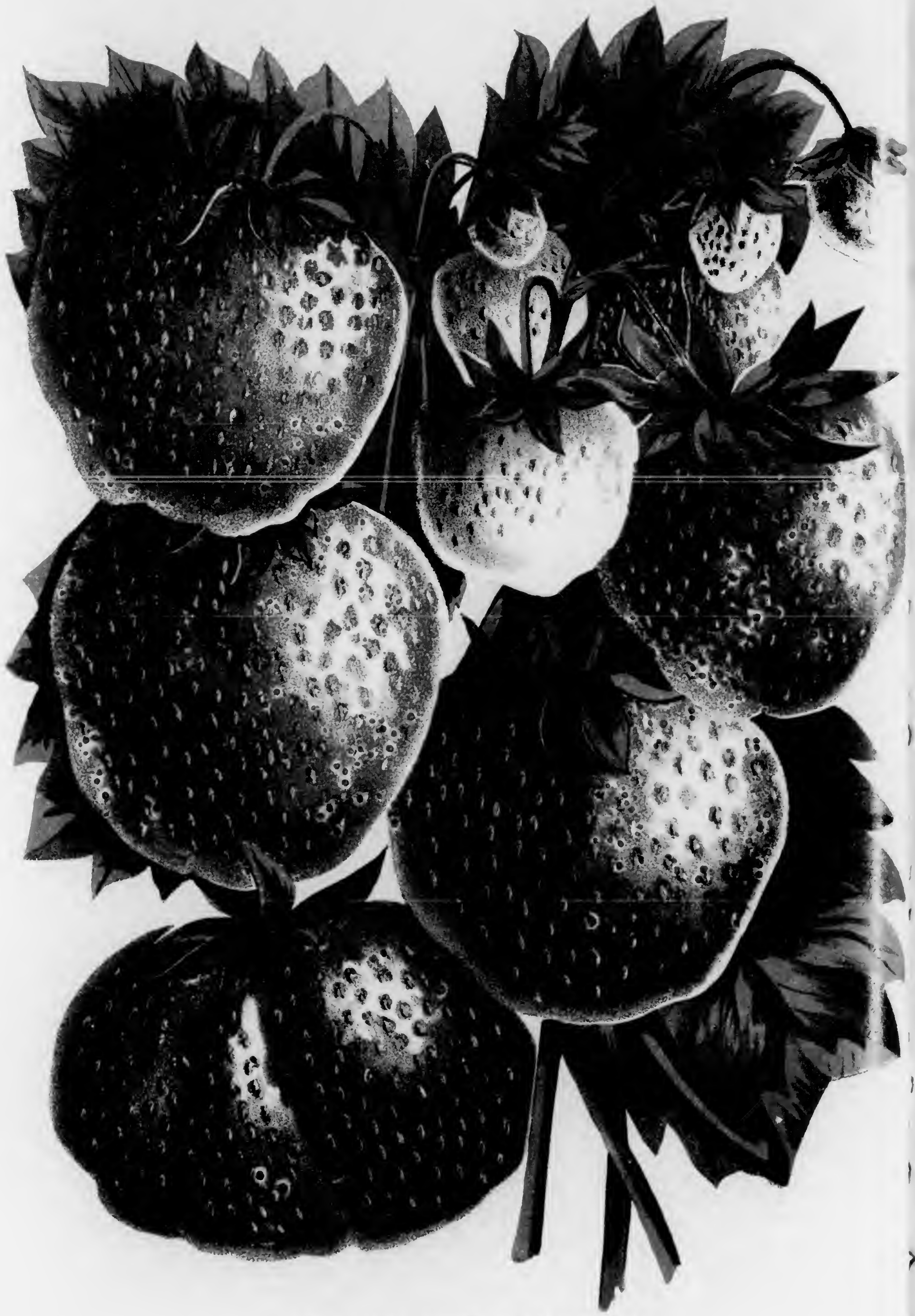
SEASONABLE HINTS.

Continuing our hints on shade in connection with landscape gardening, it may be remarked that not near as much advantage is taken of porches and piazzas in connection with house architecture as might be. The late Mr. E. S. Sanford, of New York, recently deceased, once built a suburban villa which had a three-story piazza all around the house. As a model of beauty it was not a success. When joked about it he would remark that it might be like a Chinese pagoda—it only proved Chinese pagodas were very comfortable places to live in. It is one of the misfortunes of American architecture that in copying European excellencies, the American climate has been forgotten. When our necessities in this respect have been remembered, the architect often forgets to so design the piazza that it harmonizes with the general character of the building. One of the best successes that we know of in making a piazza an effective feature in a harmonious design, is at Ridgelawn, the seat of L. V. Stone, Esq., an illustration of which we give on page 67. It will be seen that, aside from the pleasant coolness afforded by the vine-clad piazza, it heightens rather than detracts from the architectural appearance.

The entrance to Ridgelawn reminds us how much depends on tasteful entrance gates. It is like clothing to a man. When we get to know one well, it makes little difference to us how our friend is dressed. But the dress of a stranger is our first clue to his character. So we get the first impression from the entrance gate, and the landscape gardener should give it a close study.



Gate Approach to Ridgelawn.



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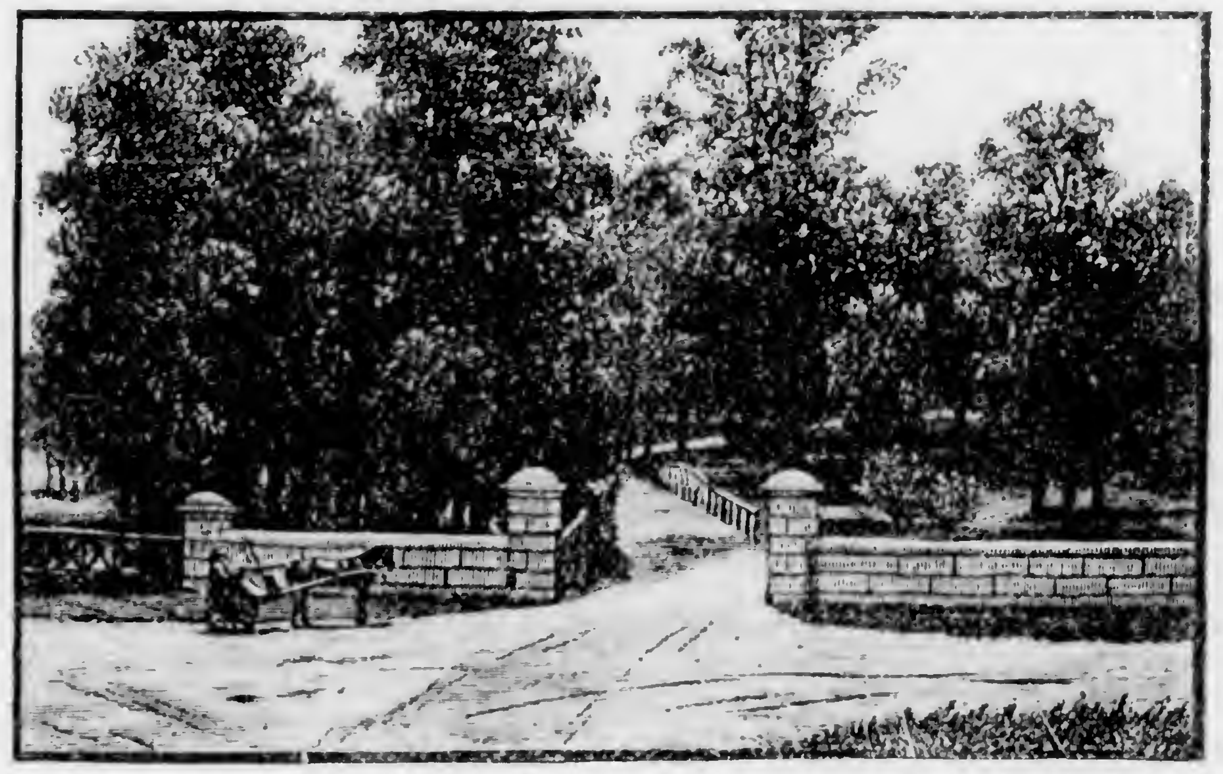

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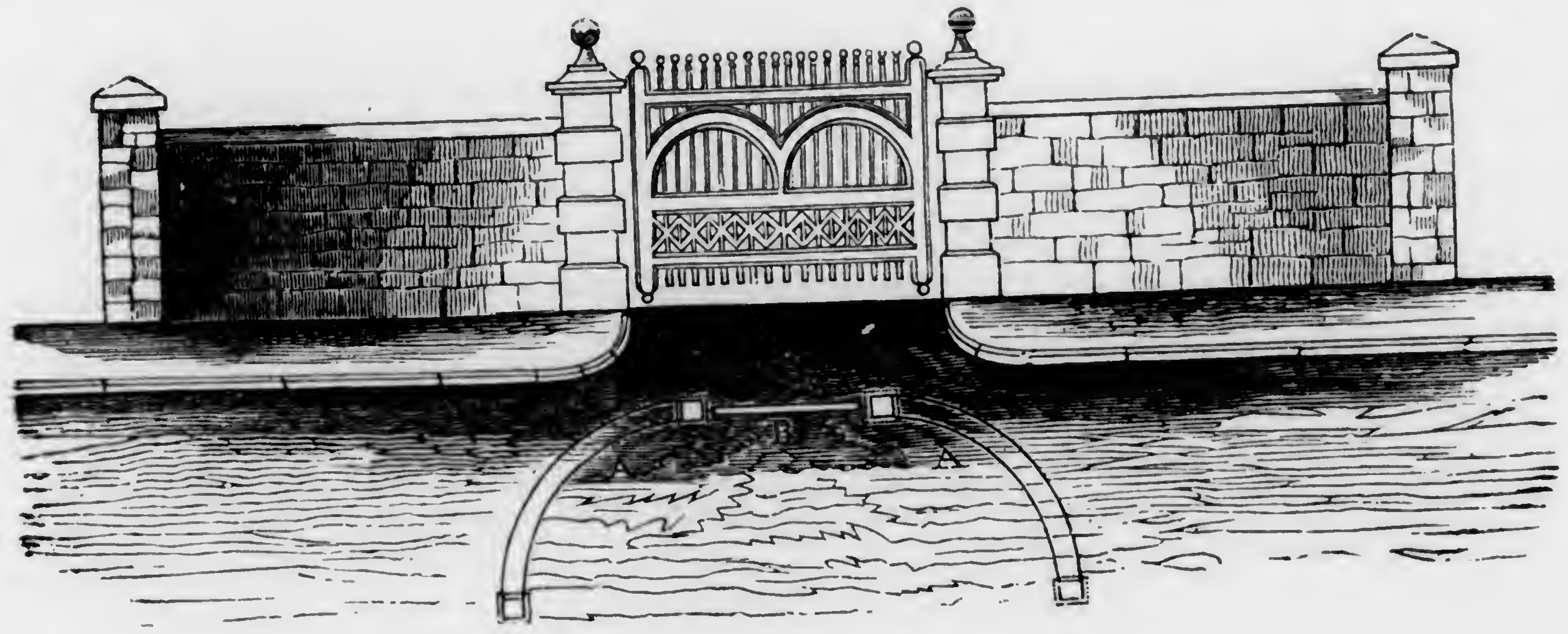
Annual flowers should be sown as soon as possible, and yet not before the soil is so dry as to powder when pressed firm. Few understand the necessity of sowing seeds shallow and then firming the soil. The writer of these lines came across, recently, a paragraph he wrote fifteen years ago, and yet it will be as new to many as if written now. Thus runs the paragraph:

"The day is warm, and the surface soil just dry enough to powder when struck with the back of the trowel. We should not ask their company otherwise, for when the soil is sticky it won't do to sow seed. The ground has been dry several days before. The surface is now powdered and about the thickness of the trowel blade scraped off. The seed is then sown, the soil drawn back and beat firmly down on the seed. You see how near the top we sowed the seed, and how firmly we beat the soil over it, and we spoke about a 'first principle.' The principle is this:—Seeds want moisture to make them grow, but they must also have air—one is an evil without the other. If deep they get only water, in which case they rot. If entirely on the surface they get only air, and then they dry up. 'But, Mr. Hintsman, why beat the soil so firm?' Another principle, dear ladies, lies there. Large spaces in soil enable the earth to dry out rapidly; small spaces, on the other hand, hold water. Crushing earth, when dry, gives it these small spaces, or as gardeners call it, makes it porous; and thus you see we have set our seeds where they will be near the air, and fixed them so that they shall be regularly moist."



Automatic Entrance Gate.

Prune shrubs, roses and vines. Those which flower from young wood, cut in severely to make new growth vigorous. Tea, China, Bourbon and Noisette roses are of this class. What are called annual flowering roses, as Prairie Queen, and so on, require much of last year's wood to make a good show of flowers. Hence, with these, thin out weak wood, and leave all the stronger.

To make handsome, shapely specimens of shrubs, cut them now into the forms you want, and keep them so, by pulling out all shoots that grow stronger than the others during the summer season.

The rule for pruning at transplanting is to cut in proportion to apparent injury to roots. If not much worse for removal, cut but little of the top away. Pruned properly, a good gardener will not have the worst case of a badly dug tree to die under his hands. In nursery, where these matters are well understood, trees "never die."

Box edgings lay well now. Make the ground firm and level; plant deep, with tops not more than two inches above ground.

Roll the grass well before the softness of a thaw goes away. It makes all smooth and level.

Hyacinths, Tulips, Liliums, and other hardy bulbs set out in the fall, and covered through the winter, should be occasionally examined, and when they show signs of active growth, must be uncovered; in this latitude this is not safe until towards the end of the month.

COMMUNICATIONS.

ROSES.

BY D. M. DUNNING.

Read before the Horticultural Society of Western New York.

I.

On the subject of roses I shall confine myself to the hardy varieties for garden culture. I regard this branch of the subject as of great importance to you gentlemen assembled here who are engaged in the nursery business, for I feel that it has "great possibilities" for the future, and is capable of almost indefinite extension. To grow a rose bush

Ridgelawn: The Residence of L. V. Stone, White Plains, N. Y.

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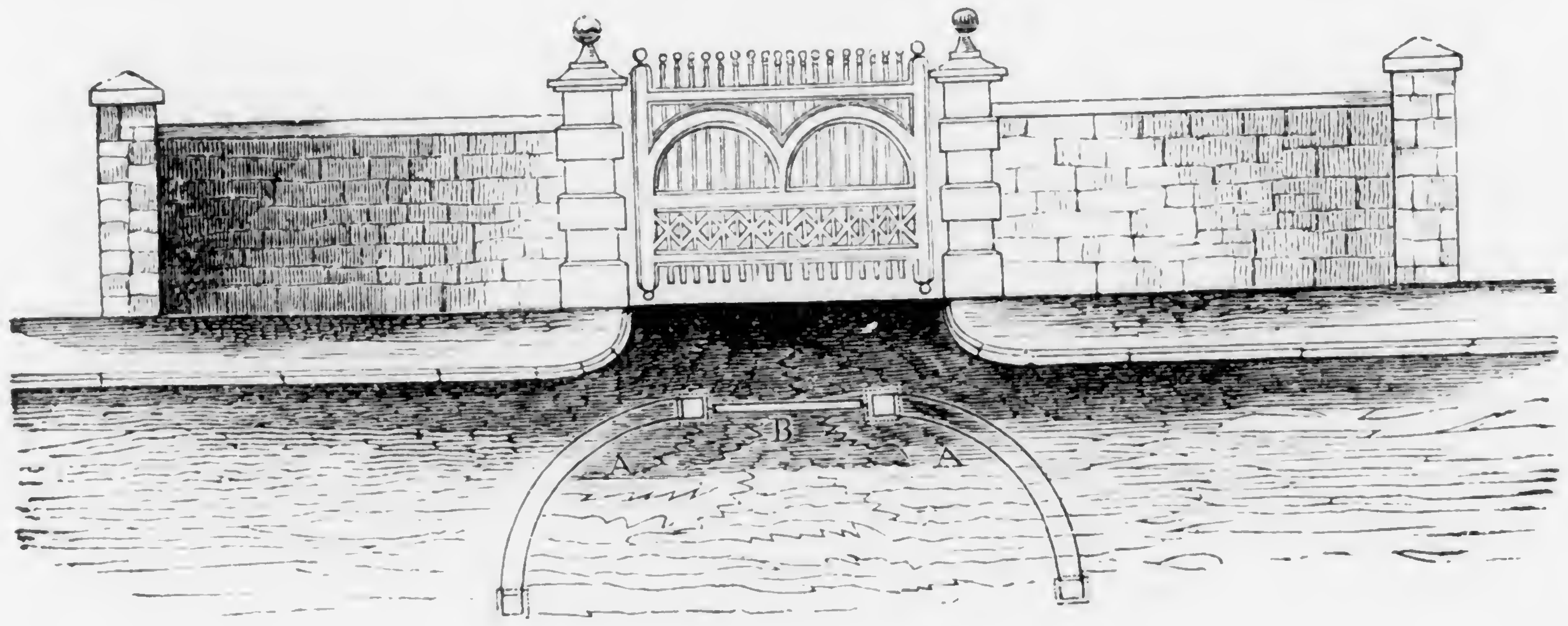

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INTENTIONAL SECOND EXPOSURE

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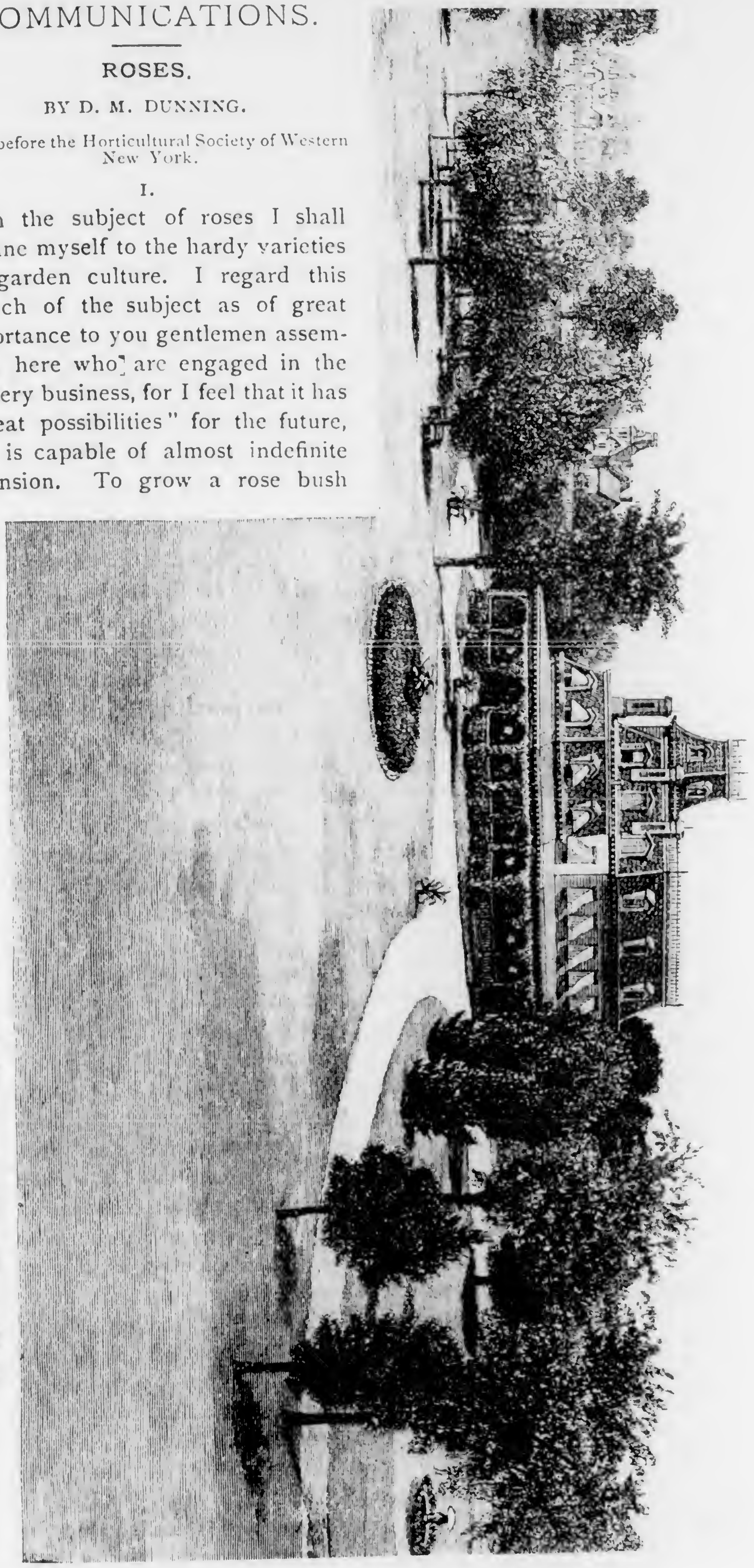

Ridgelawn: The Residence of L. V. Stone, White Plains, N. Y.

may possibly cost as much as to grow an apple tree, yet people will willingly pay twice as much for the rose-bush as for the apple tree, and if the great beauty as well as the great variety of form and color which is possessed by hybrid perpetual roses, together with their comparative ease of culture, were well understood by all lovers of this the Queen of Flowers, their introduction would be largely increased. A generation ago we had only a few of the old garden roses like Madame Hardy and George IV, and as they would grow and flourish without any particular care they were left pretty much to themselves. Some years later came the swarms of troublesome insects to attack our roses, almost completely discouraging every one from their culture, and on this account more than any other the introduction of the better varieties has been slow. Some six years ago the writer who had for some years previous been making an earnest effort to solve the problem of a supply of roses in the garden through the summer by the culture of the tender varieties and without very satisfactory results, came across a paper read before this Society by the late H. B. Ellwanger on the culture of hardy roses. This paper was a new revelation, and, encouraged by it, he was induced to go ahead and try, and the result has been most thoroughly satisfactory; so much so that he is willing to venture the assertion that the most beautiful hybrid perpetual roses, far more beautiful than any of the tender roses, can be successfully grown in the greatest profusion by any true lover of the flower who has a reasonable amount of energy and perseverance. So much has been written in the past few years on the care and culture of hybrid perpetual roses that it is not the intention of the writer to make this paper a comprehensive treatise of the subject, but simply to allude to a few important features which in his experience he finds are the greatest stumbling blocks to the would-be rose growers, and some features which he has practically found to greatly contribute to success and interest in the work.

The ravages of injurious insects, which probably cause more trouble and discouragement than any other one feature to amateur rose growers, is of the easiest control. The treatment consists simply in providing a liberal supply of food and water so as to promote a strong, healthy growth under which the insects do not thrive, and such few of them as do occasionally appear can safely be ignored. Ignorance in regard to winter protection is another difficulty with beginners. Hybrid perpetual roses should have some protection during our long cold winters. A simple bending down to the ground is of the greatest service, and if there they could be covered with snow it would answer every purpose but as we cannot depend on this we should cover them with evergreen boughs, or corn-stalks, or brush—something that is loose and will not exclude a circulation of air and yet will protect them from extreme changes of temperature. It is the lack of a circulation of air, causing dampness and mould that ruins roses when covered with leaves or manure. This makes them extremely tender, in which condition the slightest freezing will blacken and kill them. A light covering of earth is good where other material is wanting. In the spring the covering should not all be removed so as to expose the tops to the full glare of the sunshine, until the frost is well out of the ground.

The subject of pruning is often another troublesome feature and is quite apt to be neglected. When the roses are planted in the beds, be it either spring or fall, not more than two shoots should be left to each bush and they should be cut back to one or two buds each. This is the trying thing for beginners to do, but it is of the utmost importance. A friend of the writer said to him a few weeks ago, "I thought you were going to plant roses in that bed this fall," and the reply was, "Yes, they are there, already planted," and it was necessary to get down very close to the ground to discover the short stubs just peeping through the soil.

The writer is often asked during the season of June flowering about pruning the roses, and the questioner will say, "Well, now take for instance that bed of roses, how much of it will you prune away this fall?" and the reply is, "Every particle of wood that you see there now will be cut clean away this fall. The bushes are now giving all their strength to the production of the roses, but in a few days strong shoots will start just at the surface of the ground; even now you can see an occasional one, and those shoots will grow up 'way above these bushes and be left to flower for the next season. They will be laid down full length through the winter—full length because they are handled so much easier in that way—and in the spring they will be cut back, say from one-half to two-thirds being removed. The same thing is repeated year after year, and that is about all there is to the pruning of roses."

A great deal of pruning is done during the season of June flowering in cutting the roses. Hundreds of roses are cut every day and always with

stems six or eight inches long, and regardless of buds. The beds are gone over every morning and all roses that are past their prime are removed, sometimes at the rate of a bushel a day, which keeps the beds constantly in a neat and tidy condition. The cutting of the roses with long stems causes a new growth to start almost immediately, so that before the June flowering is over they are budding and flowering again. Of course the flowers are fewer, and through the hot weather not nearly as fine, but we always have a scattering supply, some varieties far excelling others in this respect.

Other important features in the culture of roses are, a good location, good soil and drainage, and an abundance of fertilizing material, and water.

The location should be somewhat sheltered from cold winds, and open to the morning sun, and the sunny south, and if partly shaded from the burning sun of summer afternoons it will be an advantage.

I plant most of my roses in beds on the lawn, and for a permanent bed where the plants can maintain their vigor for years, an excavation should be made some two feet in depth, and good drainage provided. Most of the earth removed can probably be returned, and a liberal mixture of well-rotted manure should be returned with it. Hardy roses like a good strong soil, with a mixture of clay, but neither the clay nor the manure, should come so near the surface as to interfere with the first planting of the roses.

For this purpose some good garden soil should be provided or some soil prepared from a compost of old turf and manure and without any fresh manure in it. This should be firmly packed about the roots and then a coat of well-rotted manure should be applied to the surface.

If in the fall, this serves to keep the ground from freezing too deep, and if in the spring, it answers for a mulch, and soon becomes, by the frequent stirring of the soil, somewhat incorporated into it, and the frequent waterings necessary to the growth of the plants washes down through it, feeding them just as they like to be fed. A heavy coat of well-rotted manure should be applied every fall just before winter sets in. But very few flowers should be expected the first year; in fact it would be better to pick off nearly all buds as soon as they appear, leaving only one or two to flower on each bush. This will throw the strength of the plants to a growth of wood for the succeeding year, and the occasional flowers that you permit to bloom will be such marvels of beauty, that your enthusiasm for the work will be doubled. The true lover of roses delights fully as much in a good growth of wood, with beautiful clean foliage, as he does in the production of flowers, feeling that the one is absolutely essential to the other.

SCRAPS AND QUERIES.

THE MANETTI ROSE STOCK.—"Prairie Rose," Rochester, N. Y., writes: "I note that you do not seem favorably disposed towards the Manetti stock. Roses seem to do very well on them, so far as I have seen. What is the objection to them?"

We do not think we have ever said anything against the use of the Manetti stock in itself. As our correspondent finds, so we also have found roses to do very well on them, as a general thing. But whatever their real virtue may be, it is found to be a fact that such roses become unpopular with the masses, and there is no profit in growing what people will not have. The trouble is, that the leaves are too much like the leaves of the roses. Suckers come up and the people cannot distinguish them. The sucker kills the graft and the owner does not know it. The Manetti lives and the rose dies. When the rose owner has invited his friends to come and see his lovely collection of a hundred roses, only the one poor Manetti rose opens its buds for the feast. He vows, and all his neighbors vow, never to have a grafted rose again. And what is the rose seller going to do about it? This is the main difficulty that we have found.

In England, however, where they gathered up the Manetti after their American cousin threw it over the garden fence, they seem to have other reasons for hostility to it. A recent *Garden* says:

> "Of course, as Manetti stocks can be so easily made and budded, and so quickly form big salable plants, they will die hard, for there is no denying the Manetti the merit of convenience, but that is about its only virtue."

BORDER FLOWERS.—"C. B.," Hartford, Conn., says: "Nowadays we are getting ready to start seeds for the 'border,' a little early perhaps, but we can at least lay out, on paper, some kind of a working plan. Will not some of the readers of the MONTHLY give a pleasing design for a border which will take in a good variety of plants?"

FLOWERING OF CUNNINGHAMIA SINENSIS.—Mr. James Stewart, of Memphis, Tenn., notes that a fine specimen of this, some 25 feet high, at Memphis, Tennessee, is showing female flower buds may possibly cost as much as to grow an apple tree, yet people will willingly pay twice as much for the rose-bush as for the apple tree, and if the great beauty as well as the great variety of form and color which is possessed by hybrid perpetual roses, together with their comparative ease of culture, were well understood by all lovers of this the Queen of Flowers, their introduction would be largely increased. A generation ago we had only a few of the old garden roses like Madame Hardy and George IV, and as they would grow and flourish without any particular care they were left pretty much to themselves. Some years later came the swarms of troublesome insects to attack our roses, almost completely discouraging every one from their culture, and on this account more than any other the introduction of the better varieties has been slow. Some six years ago the writer who had for some years previous been making an earnest effort to solve the problem of a supply of roses in the garden through the summer by the culture of the tender varieties and without very satisfactory results, came across a paper read before this Society by the late H. B. Ellwanger on the culture of hardy roses. This paper was a new revelation, and, encouraged by it, he was induced to go ahead and try, and the result has been most thoroughly satisfactory; so much so that he is willing to venture the assertion that the most beautiful hybrid perpetual roses, far more beautiful than any of the tender roses, can be successfully grown in the greatest profusion by any true lover of the flower who has a reasonable amount of energy and perseverance. So much has been written in the past few years on the care and culture of hybrid perpetual roses that it is not the intention of the writer to make this paper a comprehensive treatise of the subject, but simply to allude to a few important features which in his experience he finds are the greatest stumbling blocks to the would-be rose growers, and some features which he has practically found to greatly contribute to success and interest in the work.

The ravages of injurious insects, which probably cause more trouble and discouragement than any other one feature to amateur rose growers, is of the easiest control. The treatment consists simply in providing a liberal supply of food and water so as to promote a strong, healthy growth under which the insects do not thrive, and such few of them as do occasionally appear can safely be ignored. Ignorance in regard to winter protection is another difficulty with beginners. Hybrid perpetual roses should have some protection during our long cold winters. A simple bending down to the ground is of the greatest service, and if there they could be covered with snow it would answer every purpose, but as we cannot depend on this we should cover them with evergreen boughs, or corn-stalks, or brush—something that is loose and will not exclude a circulation of air and yet will protect them from extreme changes of temperature. It is the lack of a circulation of air, causing dampness and mould that ruins roses when covered with leaves or manure. This makes them extremely tender, in which condition the slightest freezing will blacken and kill them. A light covering of earth is good where other material is wanting. In the spring the covering should not all be removed so as to expose the tops to the full glare of the sunshine, until the frost is well out of the ground.

The subject of pruning is often another troublesome feature and is quite apt to be neglected. When the roses are planted in the beds, be it either spring or fall, not more than two shoots should be left to each bush and they should be cut back to one or two buds each. This is the trying thing for beginners to do, but it is of the utmost importance. A friend of the writer said to him a few weeks ago, "I thought you were going to plant roses in that bed this fall," and the reply was, "Yes, they are there, already planted," and it was necessary to get down very close to the ground to discover the short stubs just peeping through the soil.

The writer is often asked during the season of June flowering about pruning the roses, and the questioner will say, "Well, now take for instance that bed of roses, how much of it will you prune away this fall?" and the reply is, "Every particle of wood that you see there now will be cut clean away this fall. The bushes are now giving all their strength to the production of the roses, but in a few days strong shoots will start just at the surface of the ground; even now you can see an occasional one, and those shoots will grow up 'way above these bushes and be left to flower for the next season. They will be laid down full length through the winter—full length because they are handled so much easier in that way—and in the spring they will be cut back, say from one-half to two-thirds being removed. The same thing is repeated year after year, and that is about all there is to the pruning of roses."

A great deal of pruning is done during the season of June flowering in cutting the roses. Hundreds of roses are cut every day and always with stems six or eight inches long, and regardless of buds. The beds are gone over every morning and all roses that are past their prime are removed, sometimes at the rate of a bushel a day, which keeps the beds constantly in a neat and tidy condition. The cutting of the roses with long stems causes a new growth to start almost immediately, so that before the June flowering is over they are budding and flowering again. Of course the flowers are fewer, and through the hot weather not nearly as fine, but we always have a scattering supply, some varieties far excelling others in this respect.

Other important features in the culture of roses are, a good location, good soil and drainage, and an abundance of fertilizing material, and water.

The location should be somewhat sheltered from cold winds, and open to the morning sun, and the sunny south, and if partly shaded from the burning sun of summer afternoons it will be an advantage.

I plant most of my roses in beds on the lawn, and for a permanent bed where the plants can maintain their vigor for years, an excavation should be made some two feet in depth, and good drainage provided. Most of the earth removed can probably be returned, and a liberal mixture of well-rotted manure should be returned with it. Hardy roses like a good strong soil, with a mixture of clay, but neither the clay nor the manure, should come so near the surface as to interfere with the first planting of the roses.

For this purpose some good garden soil should be provided or some soil prepared from a compost of old turf and manure and without any fresh manure in it. This should be firmly packed about the roots and then a coat of well-rotted manure should be applied to the surface.

If in the fall, this serves to keep the ground from freezing too deep, and if in the spring, it answers for a mulch, and soon becomes, by the frequent stirring of the soil, somewhat incorporated in it, and the frequent waterings necessary to the growth of the plants washes down through it, feeding them just as they like to be fed. A heavy coat of well-rotted manure should be applied every fall just before winter sets in. But very few flowers should be expected the first year; in fact it would be better to pick off nearly all buds as soon as they appear, leaving only one or two to flower on each bush. This will throw the strength of the plants to a growth of wood for the succeeding year, and the occasional flowers that you permit to bloom will be such marvels of beauty, that your enthusiasm for the work will be doubled. The true lover of roses delights fully as much in a good growth of wood, with beautiful clean foliage, as he does in the production of flowers, feeling that the one is absolutely essential to the other.

SCRAPS AND QUERIES.

THE MANETTI ROSE STOCK.—"Prairie Rose," Rochester, N. Y., writes: "I note that you do not seem favorably disposed towards the Manetti stock. Roses seem to do very well on them, so far as I have seen. What is the objection to them?"

We do not think we have ever said anything against the use of the Manetti stock in itself. As our correspondent finds, so we also have found roses to do very well on them, as a general thing. But whatever their real virtue may be, it is found to be a fact that such roses become unpopular with the masses, and there is no profit in growing what people will not have. The trouble is, that the leaves are too much like the leaves of the roses. Suckers come up and the people cannot distinguish them. The sucker kills the graft and the owner does not know it. The Manetti lives and the rose dies. When the rose owner has invited his friends to come and see his lovely collection of a hundred roses, only the one poor Manetti rose opens its buds for the feast. He vows, and all his neighbors vow, never to have a grafted rose again. And what is the rose seller going to do about it? This is the main difficulty that we have found.

In England, however, where they gathered up the Manetti after their American cousin threw it over the garden fence, they seem to have other reasons for hostility to it. A recent *Garden* says:

"Of course, as Manetti stocks can be so easily made and budded, and so quickly form big salable plants, they will die hard, for there is no denying the Manetti the merit of convenience, but that is about its only virtue."

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FRUITING OF CYDONIA JAPONICA.—Mr. C. B. Paddock says: "To while away hours of illness, I have recently read back volumes of the MONTHLY, and would like to call to the attention of Gen. W. H. Noble, first, his article on page 355, December number, 1878, in which he speaks of the discouraging length of time he had to wait for the first bloom of his seedling Cydonia Japonicas. Now, if he is inclined to try again, turn to page 297, October number, 1882, and note the hedge of same only four years old, not merely having bloomed, but bearing fruit of more than twenty estimated bushels on the above mentioned hedge, 150 feet in length; and may we not look for great possibilities in the fruit as well as in the bloom of which the writer of the last mentioned calls attention to, regarding its great variation from the parent in color and tint.

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GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

A very successful lady gardener tells us that any one can grow window flowers if he knows how to water them—that "all your rules for this, that or the other, do not amount to a row of pins." Pins! well, bless her dear heart, they are worth ten cents a paper hereabouts, and that is something. Our hints are worth at least as much, and more we think. Still, there is no doubt that a good knowledge of watering is at the bottom of success, and this is what we have always taught. Water must run in readily and run out readily. When a plant is watered, it is a good sign to see it rush out at once into the saucer through the bottom of the pot. If it does not do that, something is wrong. Roots want air as well as water, alternating rapidly with each other. The water drives out the foul air, and when the water is gone, new and fresh air takes the place. So that water has a ventilating duty to perform as well as to actually furnish liquid food for plants. If our dear lady critic were now at our elbow, we fancy we should hear her say after reading this, "Well, I don't know anything about air spaces, or ventilating, or anything of that kind, but I do know when a plant wants water, and then it gets it, and it doesn't get water when it doesn't want. You see they do just as well as if I could tell a long story about it,"—and this is all true. A good shepherd knows his sheep, and his sheep know him. But when the stranger comes among them, he has to observe that the ears of one are a trifle longer than another, the nose of another a trifle sharper, or some slight difference here and there, before he will know anything. Hints are for those who do not know, not for those who do.

Should manure water be given to pot plants? Risking another lesson on practical experience from our excellent lady gardener, we will again go into reasons. Plants like rich food. But the richness of soil is taken up by the water, and carried away. Hence the continual waterings leach the soil, and in time make it very poor. So manure water is excellent in a well drained soil. It restores to the soil in some measure what other waterings have taken away. Yes, use manure water, if your plants are making a thrifty growth. Those with fine, delicate foliage do not require much of it,—coarse-leaved plants, like geraniums and cinerarias, may take a great deal. Guano or the sweepings of a pen or dove-cote, will do well for for the purpose.

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AN INEXPENSIVE GREENHOUSE.

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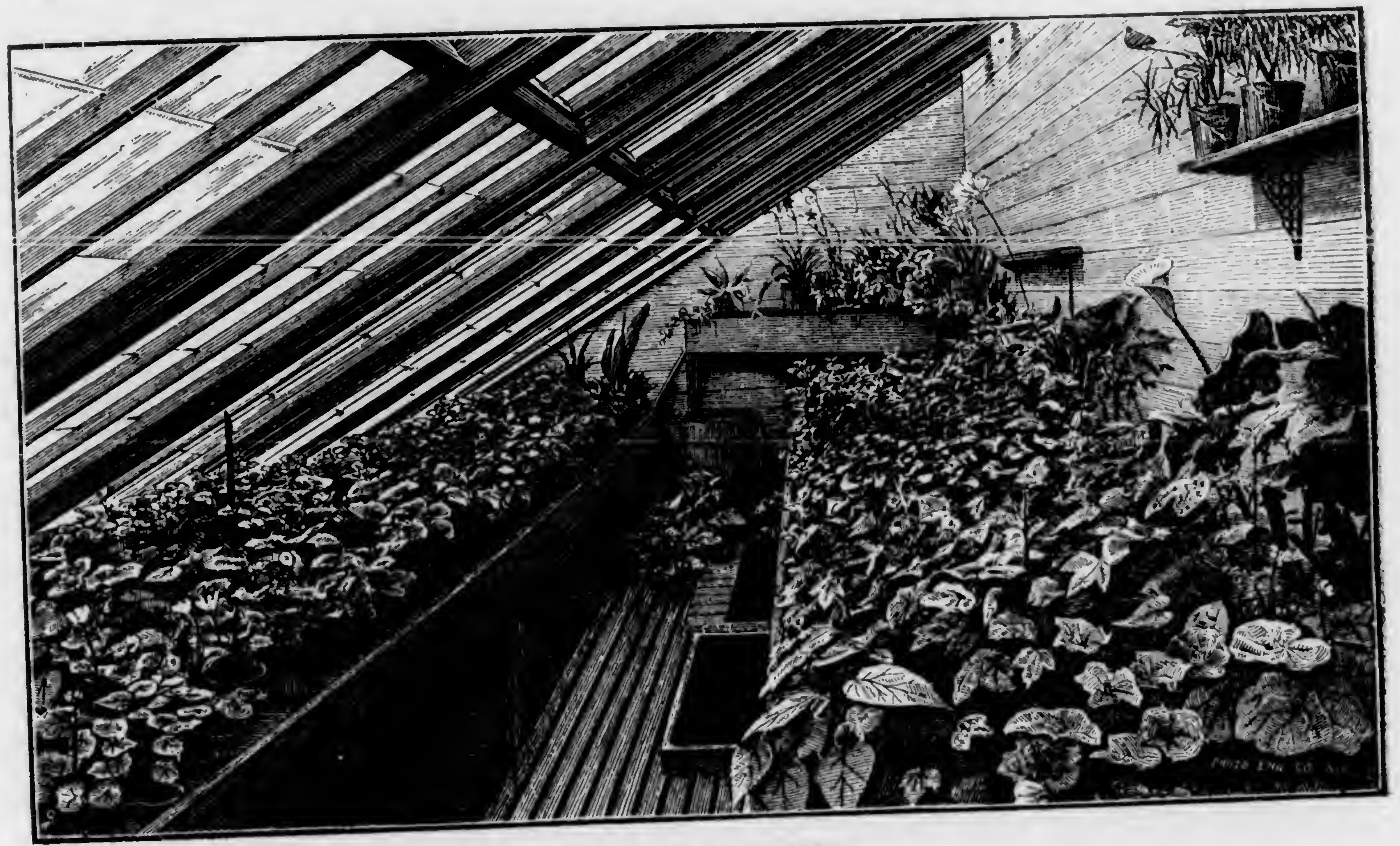
There are undoubtedly many who would enjoy having a small greenhouse, but are prevented on account of the expense, the main item of which consists in a suitable apparatus for heating; and as six years of uninterrupted success with my own greenhouse, at a merely nominal outlay, has demonstrated that it is within the reach of the many, I give you the result of my plans and experience.



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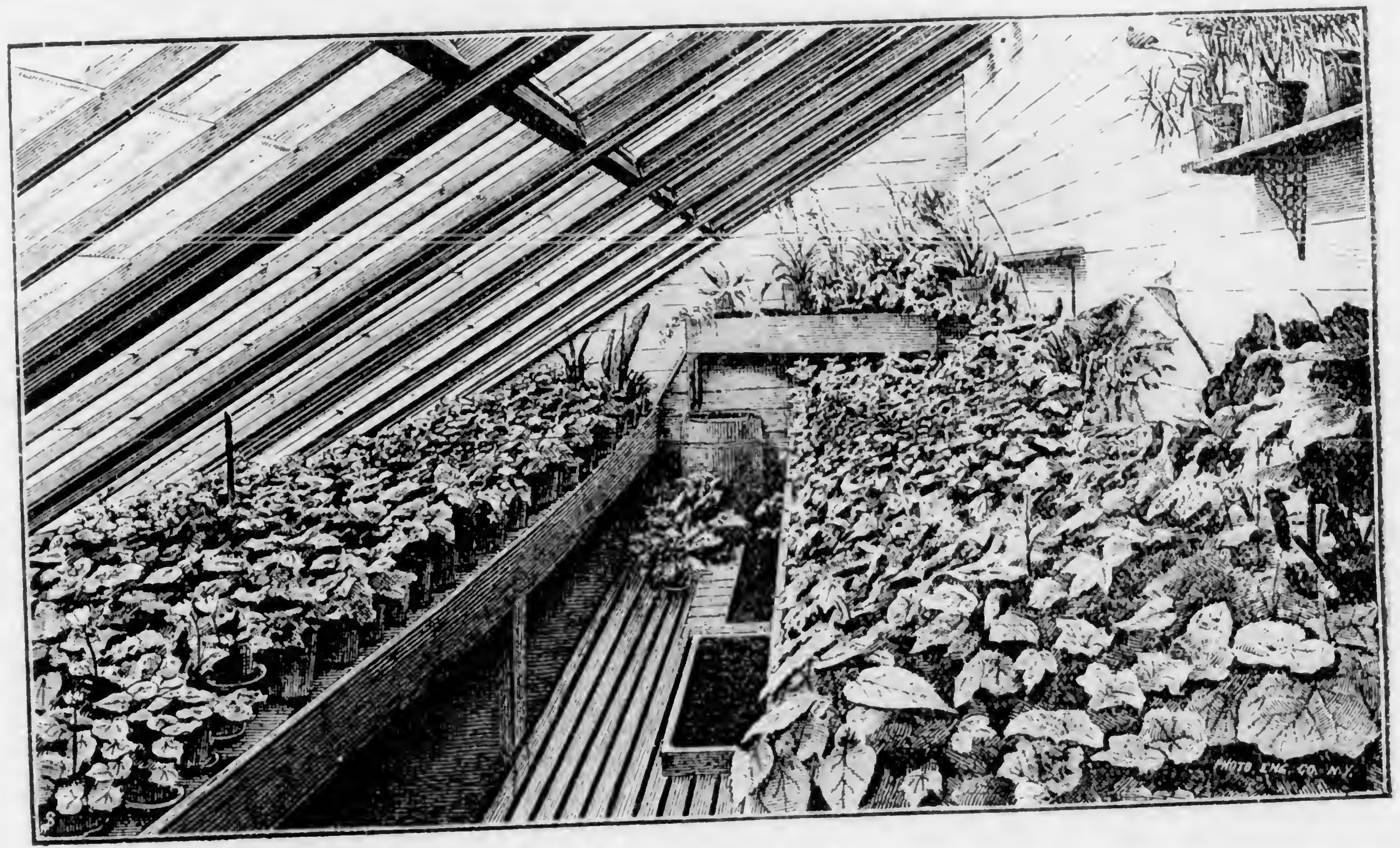
PHOTO ENG. CO. N.Y.

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The building is 11 feet by 25 feet, outside measurement. I put in a foundation 3 feet deep, 12 inches wide, on which the sills, 8x8, are laid in liquid cement; upon the sills are placed 2x4 stud-

INTENTIONAL SECOND EXPOSURE

ding 16 inches apart, 11 feet high in the rear and 3 feet high in front.

Matched sheathing is put on the studding outside and inside, leaving an air chamber of 4 inches all around the building. Over the outside sheathing is placed tarred building paper, and over this the siding.

Seven rafters of 3x6 dressed hard pine are placed equi-distant from the plate on the back to the front, with stops running the whole length for the upper and lower sash, (Fig. 1), making eight spaces for sash which are set with three rows of double-thick glass, bedded in white lead, and with a very narrow lap—not to exceed ¼ of an inch—to prevent breakage by frost.

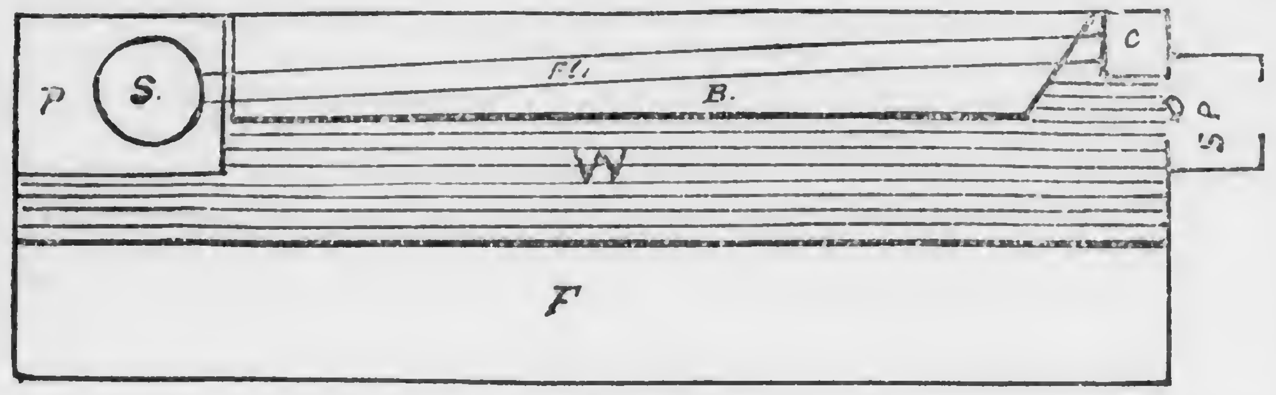


FIG. 2

Pit *P.* Flue *Fl.* Front Bench *F.* Door *D.* Stove *S.* Chimney *C.* Back Bench *B.* Storm Porch *S. P.* Walk *W.*

The greenhouse faces south and in the east end is the entrance door, swinging in and back, with a storm porch and door outside (*s. p.* Fig. 2).

A bench (*f*) 3½ feet wide runs the entire length on the front, and the same width on the rear (*b*) from the edge of the heating pit (*p*) to the east end of the house, being slanted to allow the door to swing back (Fig. 2).

The bottoms of the benches are made of common boards, with a 6 inch dressed piece nailed on the edge, making the benches about 5 inches deep, filled two-thirds full of clean sand in which the pots are bedded.

The floor of the walk, (*w*) 3 feet wide, between the benches, is made of 2-inch strips laid about 1 inch apart and nailed to cross pieces (Fig. 1), allowing dirt and water to fall between.

Athough the heating arrangement—the cost of which prevents many from having greenhouses—may have been used before, I have never seen it spoken of or suggested in any article on the subject, and I assume the credit of the plan until advised to the contrary.

It is as follows: In the northwest corner of the house I dug a pit 4 feet 10 inches by 6 feet, 3 feet deep, laid up in cement with an 8-inch brick wall level with the floor, the bottom being thoroughly grouted to prevent water seeping in from the outside in the spring and fall.

In this I placed a first-class hard coal base-burner stove (*s*) (I use a Garland No. 30, but any first-class stove will answer) and connected an 8 inch square galvanized iron pipe (*fl*) to the collar of the stove, the pipe running on an incline upwards to the chimney (*c*) and under the back bench (Figs. 2 and 3). The chimney has an 8-inch straight flue and extends about 5 feet above the building.

All with whom I talked at the outset feared there would be trouble with gas leaking from the stove or pipe, but in no kind of weather have I ever been able to detect the slightest trace of gas, and in healthfulness the plants uniformly cannot be surpassed.

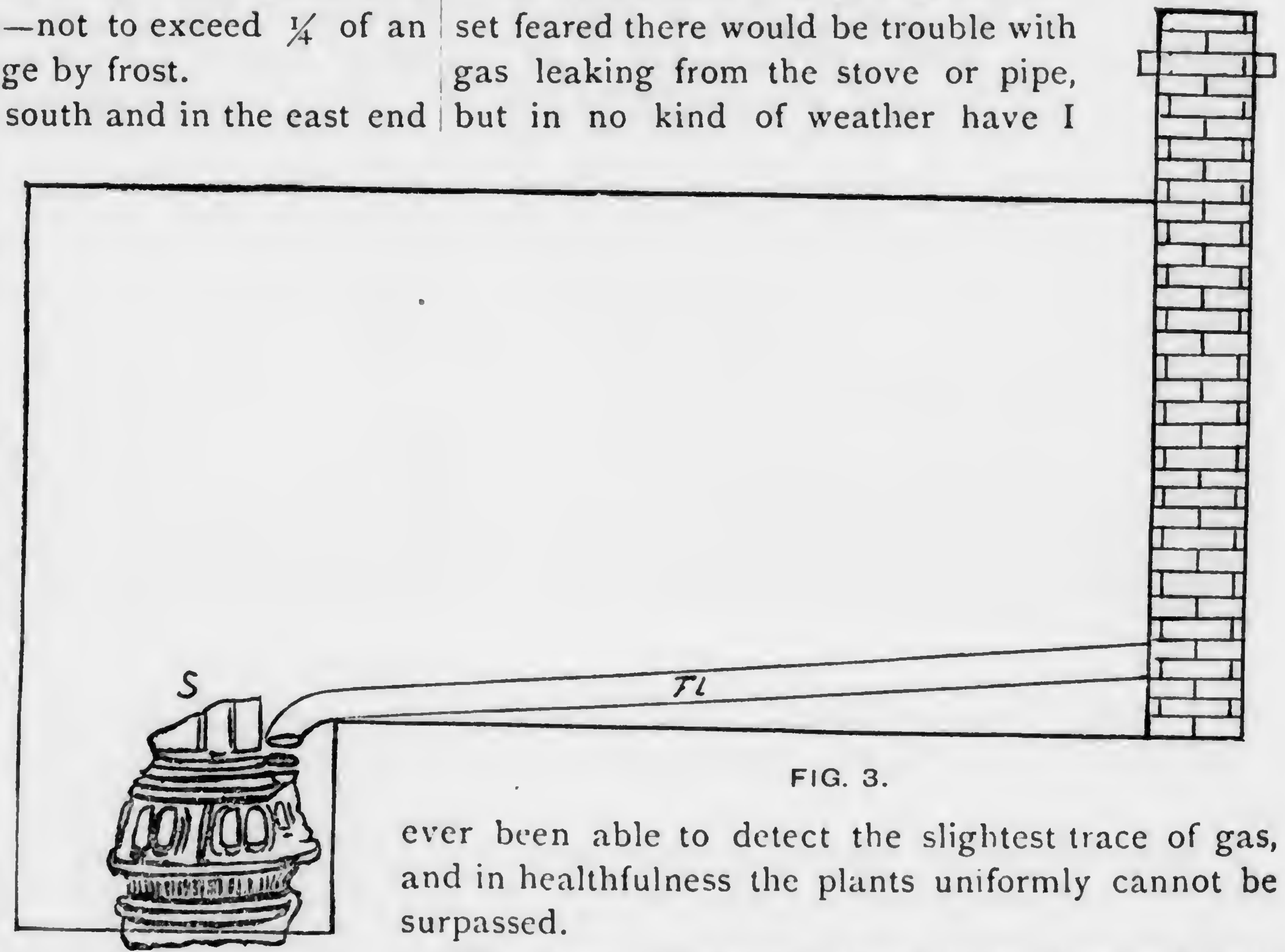


FIG. 3.

The stove consumes about three tons of coal during the winter (from the last of October to the last of April), and there has never been the slightest difficulty in keeping up sufficient heat. With the thermometer frequently indicating as low as -25° to -30° I have never had a plant chill, and the temperature generally ranges from 50° to 60° on the coldest mornings. In extreme weather I have regulated the stove not later than 11 p. m. and, as

showing its reliability, I recently fixed the fire at 10.30 p. m., and in the morning at 6.30 the thermometer indicated 57° inside, while it registered -30° outside. As an additional protection, light wooden shutters are placed over the lower sash at night during cold weather.

The size of the pit is immaterial, provided it be wide enough to accommodate the stove and long enough to allow a person to open the front doors and remove the ash pan. The advantage of bricking up the pit consists in the fact that the whole surface becomes thoroughly heated and radiates its heat when the stove cools off towards morning—independent of the necessity of keeping out water.

By having the pipe run under the back bench, I get sufficient bottom there for starting cuttings of all kinds, and on the bench keep callas, tea roses, salvias, amaryllis, and plants that require considerable heat, and by placing a triangular bench over the pit (Fig. 1) I have been enabled to successfully keep some varieties of stove plants. On the front bench I keep primroses, carnations, cyclamens, arbutilons, geraniums and plants that thrive well with less heat. The space around the pit also affords an excellent place for starting seeds. Brackets and shelves on the rear wall furnish a place where cactuses luxuriate.

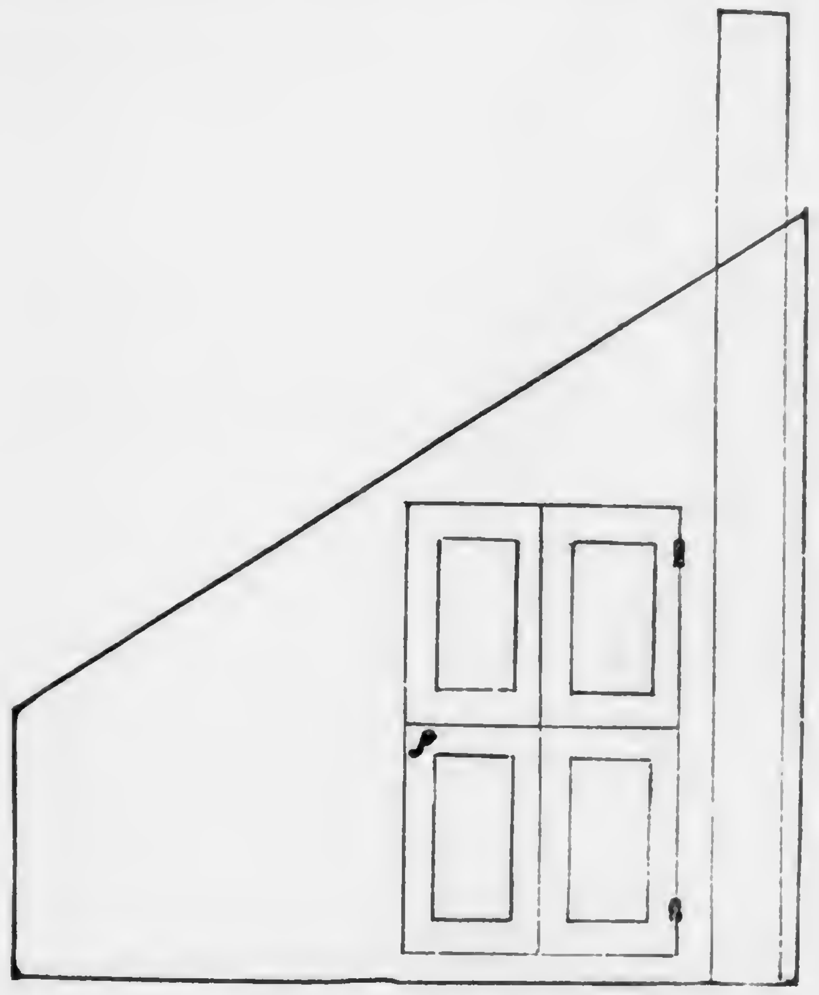


FIG. 4. END VIEW.

The galvanized iron pipe will have to be renewed once in four or five years, but aside from painting, coal and an occasional pane of glass, there is but little, if any, expense.

The contract price of the greenhouse was $180, exclusive of stove and brick-work, which brought the entire original expense to about $260.

Pots and soil are kept under the front bench. The house will hold from 600 to 1000 plants according to size. I generally have from 700 to 800. This number can be taken care of as a pleasure and recreation; more might become a burden.

The stove would heat a house at least ten feet longer, and the idea has been suggested of building a span roof, altering the inside arrangement to correspond, having a centre bench and two narrower side benches. This plan might be followed when it is desired to plant roses, etc., on the centre bench, and have a more pretentious greenhouse.

I feel confident that any lover of flowers can indulge his tastes inexpensively with this kind of a house, and it can easily be made to pay running expenses by the sale of flowers and plants if desired.

The engraving (Fig. 1) shows a view of about three-fourths of the interior and was taken the middle of last February.

Ottawa, Ill., January 19, 1887.

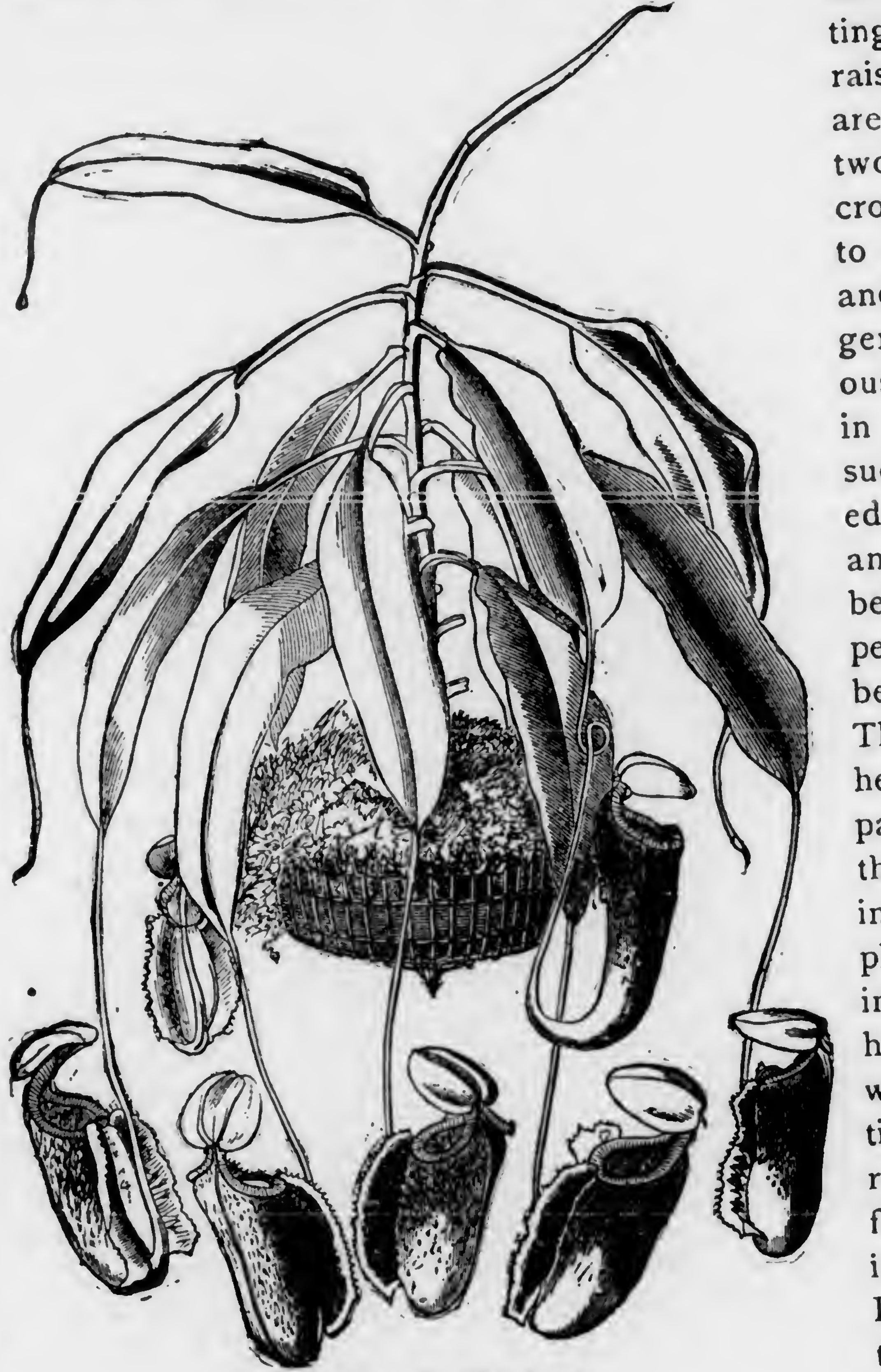
PITCHER PLANTS.

BY GEO. W. OLIVER.

Amongst the recent additions to the Nepenthes family, N. bicalcarata is especially worthy of notice. It was discovered in Borneo and brought to England by Mr. Burbidge of the Trinity College Botanical Garden, Dublin. The most casual observer may see that this species stands quite unique amongst the numerous members of the genus. The most prominent deviation from the orthodox form, is seen in the two spurs or horns which spring from the underside of the lid, projecting downwards into the pitcher. These spurs are sharp pointed and are doubtless intended to detain the unfortunate adventurers who may chance to visit the cavity of the pitcher in search of food. There is comparatively little known of the life-history of this interesting plant, but we are told that instead of the usual diet of the various kinds of insects, it aspires to much more substantial game in the shape of rats and mice.

N. Mastersianus is in some respects the most satisfactory of the garden hybrids. It is a cross between sanguinea and the old distillatoria, producing a pleasing combination of the characteristics of both of these fine species. The coloring inclines to sanguinea, while the shape is nearest distillatoria. It has the merit of pitchering rapidly; unless the plant receives a check of some kind, there is a pitcher to every leaf; the habit is compact and uniform; the plant requires no extra care to keep it in robust health. The texture of the pitchers is thin and flabby, consequently, should the interior of its capacious urn become dried up, it immediately begins to shrivel and decay. To avoid this a very moist atmosphere is necessary to grow it in. Mastersianus should not be allowed to grow taller than 6 or 8 inches, as over that height the distances between the leaves on the stem become greater and the size of the pitchers correspondingly less.

N. Rajah.—The pitchers of this species are said to attain the length of 12 inches and 6 inches in breadth, but only in its native haunts (see Vol. 24, p. 318); for, so far as I am aware, the seedlings sent out a few years ago have absolutely refused to respond to the care and attention bestowed upon them in anything like a satisfactory manner. I had two of them under my care for three years, and notwithstanding the best of treatment, they rewarded me with only three very small leaves during that period. Changes of situation and temperature were alike of no avail, and it was with some degree of consolation that I learned of other people's experience with it being similar



Nepenthes Rafflesiana.

As these curious plants are yearly becoming more popular, a few remarks on their culture may prove to be of some service. In their native habitats—in close proximity to the equatorial belt—they luxuriate in the shade of trees among decaying vegetation, and are essentially moisture-loving plants, requiring at all seasons a high temperature, consequently they thrive best in a house specially constructed to suit their requirements. This should be a low, span-roofed structure, running north and south, the stages should be narrow slabs of slate or stone laid one and a half inches apart. The sides should be boxed in so as to hold sphagnum moss to the depth of six inches. In this moss we plunge the young plants, whether seedlings or rooted cuttings, until large enough to be put into baskets or hanging pots as desired.

The various species and varieties of Nepenthes are propagated by cuttings, new kinds being raised from seed; they are unisexual, and when two distinct kinds are crossed, there is no end to the diversity in form and color in their progeny. There are various methods employed in rooting the cuttings, such as the old-fashioned method of mossing and placing under a bell glass, when 20 or 30 per cent. rooted would be considered a success. The method practiced here is to push the lower part of the cutting through the hole of an inverted 3-inch pot and plunging it in sphagnum in the hottest part of the house, covering them with glass; in a short time every cutting will root. The material used for potting or basketing is of vital importance. It should consist of one-third very fibrous peat, one-third fresh chopped sphagnum, and the remainder coarse-grained sand, roughly broken charcoal, and potsherds. In repotting old plants great care should be exercised in removing the decayed vegetable matter from the roots, as they are very tender and brittle. In order to accomplish this successfully, a small tub filled with tepid water is useful, in which to immerse the roots, at the same time using the fingers carefully to disengage the decayed compost; or, if the plants are held above the tub, a fine spray syringe may be used on them with advantage. Let them be potted before their roots become in the least dry, and afterwards thoroughly saturate with tepid water, shading heavily for a week or two after, and watering overhead only with a fine spray syringe.

U. S. Bot. Garden, Washington, D. C.

[We give with this excellent sketch, a cut of one of the older and best known species, for which we are indebted to the kindness of Mr. Blanc, in order that those who have not had the opportunity of seeing these curious plants may judge of their singular appearance.—Ed. G. M.]

EDITORIAL NOTES.

FUCHSIA, FRAU EMMA TOPFER.—Mr. Pillsbury says that this beautiful double white Fuchsia is often grown under the name of Storm King.

HELIOTROPE, QUEEN OF THE VIOLETS.—This is a deep violet purple, with a white eye, and not only rather new, but distinct.

A CARNATION WORM.—Carnation growers are troubled by "something that eats the flower buds at night—they do not know what." Mr. Henry Woltemate, a florist of Germantown, watching his plants by night, has detected the marauders. They are the common variegated cut worm, (larvæ of Agrotis Saucia.) Professor Riley says. They go down again to the earth by daylight. A little care in hunting for them about the roots of the plant will soon rid a carnation house of their presence. As they are nearly ½ inch long and proportionately thick, they are easily seen.

SCRAPS AND QUERIES.

THE VIOLET FUNGUS.—A Long Island correspondent asks: "Have any readers of the MONTHLY been successful in procuring any remedy for what is known as the violet disease? I am informed that it is impossible to grow violets in many places on account of it, and as my plants are commencing to be affected, I wish to know if anything can be applied as a prevention or remedy."

NATURAL GAS.—A Meadville, Pa., correspondent says: "We have had a real old-fashioned winter here, with plenty of snow and nearly two months of good sleighing. Mercury occasionally from 14° to 16° below zero, which will make, possibly, our peach crop a dubious one. Our city has now the benefit of natural gas, which has no sparks like wood and requires no replenishing like coal; and so our houses keep warm all the time. A good deal of evaporation of water, however, is required to keep the air in good condition for the lungs. A nice invention, self-acting, called a 'cut off' is inserted in the admission pipes in the cellar, which, in case of any temporary suspension of the flow of gas from the main street pipes, shuts off all communication with the main pipes. So, there is no danger of any influx of gas except when it is desirable to have it. Two or three varieties of these 'cut offs' have been invented and patented in our city. The most simple ones I have seen are by the firm of Hazlett & Co."

CHRYSANTHEMUM CULTURE.—"Mrs. J. G. M.," Buffalo, N. Y., writes: "Some months ago, during the discussion about Latin and common names for plants in your magazine, you printed a paragraph telling how a German objected to an English name (a particular name in English) and thought one in his own language, a perfect jaw-breaker, much easier for every one. I meant to find that paragraph and have hunted in vain through the index, and afterwards through last year's twelve numbers page by page. Can you tell me how to find it? While I was hunting in this toilsome way for what I especially sought, I came continually across some note that was likely soon to be useful to me in getting my garden ready for another summer. And I thought, 'I will turn down the corner of each leaf that I shall soon want to refer to, and then the outer corner of the magazine that contains it, so that I need not go all through the twelve numbers again to find what I want.' When I had gotten to the end of the year I gathered up all the numbers and behold, of all the twelve there was not one that did not have its corner turned over. Could I offer a better testimony to the value and constant helpfulness of the MONTHLY? The only fault I have to find with it is, that it sets me wild to do so much more than I possibly can, with little room, little time, and less strength, and the necessity of doing nearly everything myself. But I do grow many lovely flowers, and I just wish you could have seen my Chrysanthemums (pot grown) last fall! I was proud of them. I have seen many not so fine in exhibitions. I am ambitious to grow some single stemmed plants next year, and should rejoice, with a contributor to the February number, if you could give us detailed and explicit directions for their management soon."

[We hope, at no distant time, to give an essay on Chrysanthemum culture. An excellent essay recently appeared in the Transactions of the Massachusetts Horticultural Society, which will do much to answer inquiries and to help the inquirers.

It may be here noted that the German expressions, as recently given by correspondents, were not accurately rendered into English, as no doubt our German readers noted,—but this fact was lost sight of at the moment in the point to be illustrated, that a "common" name of a plant, easy enough in one language, is as "uncommon" as a botanical name in Latin to the native of another country. A "hard name" is, after all, only another term for an uncommon name. The ladies—Heaven bless them!—soon learn the uncouth names of foreign laces and dress materials, French soups and Russian dishes, and they could as easily learn botanical names, if the dear creatures would only try.—Ed. G. M.]

An Insect on Chrysanthemum frutescens.—A New London correspondent says: "I send by this mail to your address, a box containing leaves of Paris Daisy, which have been tunneled on the upper surface by an insect which you will find transformed in its tunnels on the leaf. I did not see it in the grub state. It is new here, the men had shifted the plants without noticing it, and in passing I thought at first that they had soiled the leaves with damp soil. It had wisely, for its own advantage, chosen the fleshy leaves on the young plants—old plants with small leaves are not much injured. I have picked every infected leaf and had it burned, hoping to stamp it out—keeping a few under a bell glass to find out what the perfect insect is. I have seen similar tunnels sparingly on cinerarias long ago, and at times on broad-leaved plants in the open air, but the runs were larger than those; possibly this is a smaller species of the same family."

[Prof. Riley considers them a dipterous leaf-miner of the genus Oscinis. But we have since observed that the insect has been noticed in Europe on these plants. It is probably introduced here from the Old World.—Ed. G. M.]

Greenhouse Heating.—Mr. I. C. Wood, Fishkill, N. Y., says: "The article in February number, by Mr. Hippard, on 'Greenhouse Boilers,' has no doubt been read by many interested in heating greenhouses, etc., especially by steam. He speaks of the boiler being economical in fuel, etc., which is really a very important item nowadays, especially so in this section, owing to high price of same. Now, would it not be well for Mr. H. as well as others, to give figures, as near as possible, of the quantity of coal consumed, kinds, sizes, etc., say for December and January? We put up a range of glass the past summer, about 24,000 feet, or about as much again as Mr. H., and put in two upright tubular boilers set so as to work them jointly when needed, and have been working so for the past two months. We maintain a night temperature of 54° to 58°; the houses are new and tight, but the situation is very exposed from all sides; the temperature for December and January averaged very low, especially so for December, lower than for several years, though not so extreme as at other periods for short times; the lowest here was 8° below zero. We use Pittston coal, grate size, which costs us on cars at our station, $4.50 per gross ton, and we consumed for the two months, December and January, about 50 tons gross, or a total expense for coal of $225; it cost us to put it in bins about 30 cents per ton. Will others give their actual experience so we can better judge as to economy of boiler, etc?"

The Montgomery County Rose Disease.—In our last the receipt was noted of rose plants ftom Montgomery county, in which the leaves were all "blighted" as if by some fungus, while the roots were all granulated as in the case of grapevine roots attacked by Phylloxera. But on cutting open we could find no trace of insect larvæ. Supposing it might be the result of fungus, the specimens were sent to Prof. Farlow, who reports he finds no fungus, but believes the swellings to be galls caused by the deposit of the eggs of some nematoid worm. The Editor suggested to Prof. F. that possibly it might be the work of a myxomycetous fungus, such as causes club-root in the cabbage, and which seems to be considered the cause of some such swellings in rose roots in the Old World. Prof. F. remarks on this: "I should hardly think the swelling could be attributed to any myxomycete, if so it must be different from that which causes club-root."

We can hardly give our correspondent any advice in his serious trouble until it is decided what is working on the roots. Let him cut some of the swellings open from time to time, and see if insect life develop therein. A good pocket lens will determine this.

The hint, however, should not be lost on rose growers. When planting out roses, examine carefully to see if these swellings are on the roots, and plant nothing that presents signs of their existence.

Begonia semperflorens gigantea rosea.—Under this name we have from C. H. Murphy flowers of a very beautiful Begonia. They are in dense forked cymes, and of a bright vermilion rose color. It is remarkable that in the nine stalks of flowers, there is not one female flower among them.

Fruit and Vegetable Gardening.

SEASONABLE HINTS.

When preparing hints for the flower and pleasure grounds, something whispers to us to say everything possible in favor of the birds. Undoubtedly these lovely creatures give a double pleasure to that which the garden itself would afford. But when we come to the fruit and vegetable garden, we should meet with a direful storm if we said much in favor of birds. Of what consequence is the cheerful spring chirp of the English sparrow, if before the spring is over he takes all your peas away? Suppose we admit that the robin lives on the earth-worm and similar things in early spring, what if he leave you never a cherry on your tree? As a lover of nature we sing praises to birds. As a fruit grower and orchardist, it is not easy to decide what song to sing. In the old world, cherry and other fruit growers have to depend on fishing-nets over the trees, unless on a very large scale, when dependence is had on boys with clacquers, to drive them away.

In vegetable growing, deep, rich soil, now so generally condemned for fruit gardens, is of the first importance here. Soil cannot be too rich or too deep, if we would have good vegetables. It is, indeed, remarkable, that in many respects we have to go very differently to work to get good fruits than we have to perfect vegetables. While, for instance, we have to get sunlight to give the best richness to our fruits, our vegetables are usually best when blanched or kept from the light. So also, as we keep the roots as near the surface as we can in order to favor the woody tissues in trees, we like to let them go deep in vegetables, because this favors succulence.

Where new Asparagus beds are to be made, now is the time; the ground should be rather moist than dry, and be trenched about two feet deep, mixing in with it a good quantity of stable dung, and, if the ground be inclining to sand, add some salt; the beds should be marked out four feet wide, and the alleys about two feet. If pegs are driven down at the corners of the beds permanently, they will assist operations in future years. Having marked the positions of the beds and procured a stock of two-year-old plants, place them on the soil nine inches apart in rows, one foot asunder, making three rows in each bed; then cover the whole with soil from the alleys and rich compost a couple of inches.

In a general way no hints can be given that are applicable to the whole United States, as to times to sow or plant garden seeds. Everybody knows that the sooner after frost is gone, and ground becomes dry enough to work, the hardier kinds of vegetables must be sown, and the more tender ones not set till the ground becomes settled and warm. Nothing is gained by setting things of the tender kind out early, for, though frost may not catch them, they become stunted, and later ones will catch up and outdistance them.

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COMMUNICATIONS.

BLACKMAN PLUM AS A STOCK FOR THE PEACH.

BY CASPER HILLER.

Instead of dropping the Blackman plum from nursery catalogues and burn the stock on hand, as suggested by H. E. Van Deman, Pomologist, Agricultural Department, why not use it for stocks for plum or peach? Its remarkable vigor no doubt would make it a desirable stock for peaches. These would be very nearly borer proof, and from experiments made, perhaps "yellows" proof.

H. M. Engle, of Marietta, Pa., one of our most progressive fruit growers, has been experimenting on this line for several years past. He inserted buds, unmistakably infected with yellows into the Blackman, and they came forth perfectly healthy. His experiments are too few and recent to settle the question, but they are of such importance as to warrant others to continue them.

As the Blackman produces little or no fruit, we have to utilize it as a stock, by first working it on other plum stocks. These, if set deep, will soon form roots from the Blackman, and make good plants.

But we now have a promise of a more convenient stock grown from cuttings. Mr. McLendon, of Thomasville, Ga., claims to have grown from cuttings planted 15th last March, stocks from 3 to 8 feet high. He desires to be furnished with the cuttings (he paying the freight) and agrees to deliver all that grow at $5.00 a hundred. The price is too high for general peach budding, but for carrying out experiments it would be endurable. If peaches would thrive on these plum stocks, they would be desirable, even if they were not yellows proof.

The yellows I think would not enter the plum roots, and if so our soil would remain clean. The roots of dead peach trees are so full of the yellows that in spite of all our knowledge of plant foods, nitrogen, potash, phosphoric acid, magnesia, lime, &c., we cannot successfully raise a young orchard among the stumps of an old one.

Conestoga, Pa.

[Mr. Hiller's suggestion we regard as well worthy the attention of peach growers. We have for years had not the slightest doubt but that the disease known as the yellows comes primarily from the attack of a fungus,—the mycelium of a species of Agaric, on the roots of the peach. This fungus starts on dead or half-dead wood, and then spreads to the roots that are healthy. In some form, not clear to the writer, it enters the structure of the tree, and possibly originates the minuter fungus organisms found by Prof. Thomas Taylor, and other investigators, in the wood of the diseased tree. In like manner it possibly changes physiological action, so as to account for the lack of mineral elements found by Prof. Penhallow in diseased structure. Be all this as it may, no peach tree shows this disease till after the fungus mycelium has attacked the roots.

Now if it can be shown that this fungus does not care to attack plum roots—and we believe the evidence tends to favor Mr. Hiller's views in this respect—it will pay the peach grower, even at $5 per hundred for the stocks, to have the trees on plum roots. But if we can once get a fair demand for the stock, even though it has to be propagated from cuttings, layers or root cuttings, means will be found to produce them cheaply. A peach tree that is warranted free from attacks of the yellows and will continue in bearing for a quarter of a century, will be well worth ten-fold more than the ordinary tree, with its short life and great risks.—Ed. G. M.]

THE PRODUCTION OF PEARS AND APPLES FROM SEED.

BY D. W. LOTHROP, WEST MEDFORD, MASS.

About twenty-five years ago I commenced to plant the seed of a few of the best pears, in hopes of raising some good and acceptable varieties. Whether or not I have been successful, I shall not at present attempt to decide—wishing to show more particularly the physiological influences at work in their varied production, whether the fruit be good or bad. To me—a mere amateur cultivator—the subject has been very interesting, at times fascinating. It required much patience; but I endeavored to forget the previous seedlings (when well started or grafted on good stocks) by my interest in planting new. It requires from about five to fifteen years for their production of fruit from the seed; usually they bear near the tenth. One graft, which bore this year for the first time, is twenty years old, though in its course it has met with some accidents and neglect.

Position of Garden.—High and dry land being the best for the natural development of the pear, as well as of other fruit, I should prefer such a position not only for the growing of the seed to be planted, but of its fruit as it progresses. A gentleman near Boston, whose garden was low and his soil clayey and cold, raised a considerable number of fairly grown seedling pears, but they were mostly acid or insipid. My garden is high and warm; but in regard to such a necessity I do not pretend to speak with the utmost confidence.

Preparation of Seeds.—Seeds openly planted in the autumn and left unprotected in this latitude, will perish. I have always planted in pots or boxes, and placed in the cellar on a shelf, where mice will not exhume them, and in the early spring started them in a cold room behind a sunny window. As summer advances I place them out of doors, sunk in the earth. In the autumn, remove them to the cellar. They will then be from 5 to 10 inches in height. The boxes, or divisions of boxes, should be labeled to mark the different seeds, and this for obvious reasons. I use the well developed seed from the best specimens of well ripened or decayed fruit, planting immediately, and reject knotty specimens, as I fear the imperfection may be propagated.

Treatment of Young Seedlings.—After one year's growth in pots or boxes, I set them out in a row about 2 feet apart, protecting them in the autumn. After another year's growth I select those that are the most vigorous and promising and work them on to natural stocks. Sometimes I take scions from those of only one year's growth, when they show good points. Dr. Van Mons, as is well known, used no cuttings from his seedlings, but kept them on their own roots, and encouraged their bearing by transplanting them every two years. I prefer to graft into advanced

stocks—sometimes several on one tree—and earlier fruiting is the result. When I first began to interest myself in raising seedlings, I was willing that scions should grow slowly, as I regarded it as favorable to the development of fruit-buds. Hence I worked some on quince stocks. But I was not long in finding out that they needed, at least a few years of strong, healthy growth, to give them necessary body. One would naturally suppose that the first fruit-buds would appear on the older wood; and Mr. Field, in his book on Pears, states it as a truth. But the first fruiting of seedlings is usually high up on the later growths of wood. As to the influence of ringing, twisting, bending or pruning of the young seedlings, or grafts from them, to induce early fruiting, I have not met with success—in all cases the branches bearing first having never been touched. In the fruiting of seedlings, it seems to be more a matter of age rather than facilities or conditions, varying in different varieties; yet I would not deny that where they are growing rapidly on their own roots, or otherwise, some check would be favorable. But some (if not many) stocks are naturally slow growers, though not a few botanists believe that cross-fertilization most generally gives increased vigor.

Prognostics.—A small, round, thin leaf is unmistakable evidence of a pear not much removed from the wild type, and is rarely, if ever, produced from the common seeds of the garden. A long, soft leaf, as well as a large and broader one, is favorable—the darker the better. But they do not possess certain indications of character, for I have noticed the Black Worcester shows a leaf nearly, if not quite, as handsome as the Bartlett. Long-jointed branches are favorable. The color of the new wood is some indication of the color of the fruit. The Winter Nelis is darker than the Bartlett, the Sheldon than the Anjou.

Results of Cross-Fertilization.—What these are, of course no one can tell, as the influences of mixed pollen on the germen, together with constitutional or spontaneous forces and complications, are almost endlessly diversified. I have noticed, however, in the seedlings which I have raised from seed accidentally impregnated, that the female parent almost universally transmits its own size, and usually its shape and color. Quality and season, I am impressed, come more frequently from the extraneous impregnating variety than do other points of resemblance. The first seedling pear I raised was from the Bartlett, and in about eight years a pear was produced in size, shape and color of the female parent; but, while melting, it was exceedingly sour. As I took the seed from my own garden, in which I had no such acid pear, and knew of none in the neighborhood, whence came its acidity? Was the seed self-fertilized only, and the sourness a constitutional or spontaneous tendency to degenerate? So it would seem; and hence we cannot say that, with such a tendency, we are sure of a true union of two pears when perchance the seed is equally fertilized by both. Aside from ordinary combinations, there seems to be frequently at work a force or influence we cannot account for, and it is generally for the worse. A pear raised from the Anjou also nearly produced itself, excepting the power to ripen. Only rarely late in the spring could one be made edible—they ultimately perishing with black rot. How comes this peculiarity? A singular variety came from the Clairgeau. In close contiguity to where the tree grew was the Comice. I flattered my patience with the hope that the latter might have fertilized the seed of the former, and thus give me a fine-flavored, large pear. In seven years specimens were produced, rather small at first, but they afterwards increased in size, and became as large as the Comice and similar in shape, though earlier; were yellow, frequently with a blush, quite acid, and rotted badly on the tree. I could not discover a trace of the female parent in it. Though large and handsome, it was worthless. Believing that the seed of a small pear will almost invariably produce a small pear, and that of a large pear a large one (as virtually stated above), from a Dana's Honey I felt almost certain of a small fruit. So it proved, as it bore three the present year. The size is about as large and the color the same as the female parent, though shouldered like the Duchesse. They blew off before being matured, but the indications as to quality are not very favorable. Seedlings from the Catherine and the Buffum have shown the size, shape and color of their female parents—the former almost a reproduction of the parent, even to flavor. A seedling from a medium-sized Comice, from a lot presented by a friend, showed a fruit of about its size and color, but a little more pyriform, and a little later in season. The tree has a peculiar and distinct leaf, being wavy, long and dark green. From the Duchesse I produced a large yellowish fruit, though entirely worthless. But I pass to

Seedling Apples.—The apple seems to be governed by the same general physiological laws regarding reproduction, as the pear. From my own experience, the female parent gives size, shape and color to its progeny,—season and quality being more likely to be affected by extraneous fertilization. A Garden Royal produced its size, shape and color, but was acid and a winter fruit. A Red Astrachan became evidently crossed with the Baldwin, being large, well colored, but firmer, and two months later than the Astrachan, with the latter's flavor. The same can be said of a product of the Williams, which probably became influenced by the Baldwin, so far as to make it a winter or late autumn fruit. The Ladies' Sweeting reproduced itself, and was probably an instance of purely cross-fertilization. Others I have raised, which need, perhaps, no special notice.

Speaking generally, from my own experience, I think the female parent has the greater influence on the progeny, though this may not always come from the degree of its self-fertilization, but from other inherent forces before alluded to. Still, the opinion seems somewhat hazardous, for a few years ago, Mr. Cox, of California, exhibited on the tables of the Massachusetts Horticultural Society something like a dozen different seedling pears, all said to be raised from the seed of the Belle Lucrative. Only one resembled the parent, while a number of well-known varieties were represented in a marked degree.

On this complicated subject I take the liberty of observing, that in artificial impregnation, the presumption is that we get a union of two varieties, that of the one impregnated and the other that fertilizes. But if the anthers of the female plant are clipped out, to avoid self-fertilization, the product would be no cross, but only partake of the character of the male parent—unless some uncertain, innate power of the other parent exerted itself. The latter not existing, a Bartlett seed fertilized by the Seckel pollen would produce merely a Seckel.

In his "Darwiniana," Prof. Asa Gray observes that the causes of variation are not known. Is this assertion consistent with a belief in the sexuality of plants? Does close or cross-fertilization give no character to the progeny, but simply vitalize the seed?

GLANDS ON THE PLUM.

BY H. E. VAN DEMAN.

When I saw the article I wrote in print in the last number of GARDENERS' MONTHLY, regarding the Blackman plum, I noticed that I did not say just what I wanted to say. It was my intention to say that the glands on this hybrid variety or mule are much more prominent than on any species of plum with which I am acquainted, but the reader would clearly infer from what I then said that glands do never occur on any plum. We know this to be different, for there is a slight development of glands on several species of Prunus and one in particular (Prunus glandulosa), found in southwestern Texas, has quite distinct glands all around the margin of every leaf but not upon the petiole in a prominent degree.

We will try to carefully experiment on the crossing of Amygdalus and Prunus this year. Perhaps we are not certain just how variations do occur and may often be the result of the work of some stray pollen carried by bees, and is thought to be variation induced by the variety within itself. Really, as I see it, we have very little positive knowledge on this subject except in the animal kingdom. There we know hybridization and sterility are quite closely connected, and that sterility is far more likely to occur in mules than in those cases in which species are not crossed.

Pomologist U. S. Department of Agriculture.

[Mr. Van Deman gives the view of sterility in hybrids, as the view generally prevails. It is, however, a popular error, and has arisen from the fact that the hybrid between the horse and the ass does happen to be almost always sterile. Mr. Darwin has occasionally been quoted as authority for this sterile view of hybrids in general, but in a letter to the writer of this but a couple of years before his death, he utterly repudiated such a view, and stated that he was even then preparing a paper to show how very fertile some hybrid geese were.—Ed. G. M.]

CHINESE QUINCE.

BY MAX.

This fruit is doing remarkably well in tide-water Virginia. For three years past it has borne heavy crops, falling little short of the Orange and Angers varieties in quality, while in size and perfectness of fruit it entirely overshadows them. Mr. C. R. Moore, of Northampton county, in this state, sent to the Agricultural Department at Washington, a specimen weighing 4 pounds, and the writer saw a barrel of them, grown in the same county, the smallest of which weighed 1½ pounds, while the average was over 2 pounds. The fruit was free from specks or knots, and were kept in good condition until Christmas. How much longer they would have continued in good order is unknown, as the housekeeper claimed them for sweetmeats. The tree is almost an evergreen in this latitude, retaining its foliage until December, and gives no sign of fungus of any kind.

Whether the seasons are sufficiently long to mature the fruit in more northern localities, is doubtful. Can you, or your readers, give information on this point? It is undoubtedly a great acquisition for southern territory.

I think with you that it would make a good stock for pear, but have never tried it.

Richmond, Va., Jan'y 11, 1887.

EDITORIAL NOTES.

CANNING FRUITS AND VEGETABLES.—At a recent meeting of the Summit Co. (Ohio) Horticultural Society, Mrs. Claypole said she had used cotton and found that it had excluded the spores of the yeast fungus and consequently no fermentation could take place, but smaller spores of other fungi got in and caused the fruit to lose its flavor. The cotton was dried in the oven and cut into rings to use in the place of rubber. It must not be allowed to get moist, even from the liquid in the can. The rubber ring is the weak spot in canning. In ten or twelve months it loses its elasticity and soon after ceases to be a sure protection. Wax is perfectly safe to use. To open the can, lay a coal on the cover a few moments.

NEW FRUITS.—Nearly every catalogue that comes to hand, or serial of any kind published, has a sketch or description of some new fruit or other, until the whole science of pomology approaches unutterable confusion. It is time, we think, that some standard should be raised, to which all new claimants should be compelled to conform, and the American Pomological Society could do no better service than attempt something of the kind. Florists have to do it. They establish a standard of excellence, and all the claimants that fall short are rapidly dropped. The efforts referred to by Mr. Veitch, in regard to the chrysanthemum, should be carried into fruits as well.

FRUIT IN INDIANA.—The money loss in a bad fruit year, such as 1879 for instance, according to Professor Throop, of Lafayette, was $100,000.

KIEFFER PEAR.—We had recently a pear of this variety sent to us, which was truly delicious. It reminded one of the luscious specimens Mr. Kieffer himself sends out. This was raised on a quince stock. This would indicate that very luxuriant growth may have something to do with the inferior quality of which so many have reason to complain; and perhaps some of the credit Mr. Kieffer receives for the splendid fruit he produces may be due to the fact that they come from the old trees which have lost their early vigor of growth.

It has come to be considered that the Kieffer does not do well on the quince stock, and we believe this idea is well founded. Has any one tried it by double working? In the days when every one was enthusiastic in dwarf pear culture, it was found that a number of varieties did not do well on the quince. But this difficulty was obviated by grafting some kind on the quince which had no objection to that union, and then grafting the more fastidious sort on that. We have an idea that this would be very desirable in this case, and by this sort of management fruit be produced as commendable for exquisite flavor as the specimen before us.

MOORE'S DIAMOND GRAPE, as illustrated in the *Horticultural Art Journal*, has medium sized golden berries, but a very large and rather compact bunch. The bunch is about eight inches long by five wide, and the berries three-quarters of an inch. It is a cross between Iona and Concord, raised by Mr. Jacob Moore, who also raised the well-known and popular Brighton.

FRENCH BREAKFAST RADISHES.—These seem to be a very early and excellent variety. Mr. W. W. Ransom had some on exhibition at the meeting of the Massachusetts Horticultural Society, on the 8th of January, which speaks largely in their favor.

THE DANVERS YELLOW ONION.—This onion, introduced to American growers in 1849 or 1850, is just coming to be appreciated in European gardens.

SCRAPS AND QUERIES.

FINE CROPS OF SWEET POTATOES.—A correspondent tells the *American Garden* that from four hundred to six hundred bushels per acre is the good crop of sweet potatoes in some parts of Kentucky.

A FINE MUSHROOM.—With a beautiful specimen, Mr. John Cullen, gardener to E. P. Wilbur, Esq., of South Bethlehem, writes: "I have forwarded by mail to-day one mushroom, cut on Sunday morning, weighing when cut 13 ounces;

grown in the mushroom-beds of Mr. E. P. Wilbur, President of Lehigh Valley R. R., South Bethlehem, Pa. Please let me know by mail what you think of it, and if worthy, make a note of it in GARDENERS' MONTHLY. I cut mushrooms daily similar to one sent from the beds that it was grown in."

[The weight is correctly given, and it measured nine inches across. We never saw a larger or finer specimen in a cultivated state. In 1871 the writer gathered one on the volcanic soil that covered the buried forest in South Park, Colorado, that was ten inches across. This is the largest one the Editor has any note of. It was not eaten, but was undoubtedly a true specimen of the common edible mushroom.—Ed. G. M.]

FORESTRY.

COMMUNICATIONS.

PRACTICAL FORESTRY.

BY T. BENNETT.

In Number 337, page 19, of the GARDENERS' MONTHLY, Mr. Thomas Bassler, of Geuda Springs, Kansas, takes exception to the hint given in my sketch of the Adirondacks, in Number 335, as to the use and utility of growing trees there, and thinks the scheme impracticable.

I spoke chiefly in favor of the Sugar Maple. He thinks if the Government would establish nurseries in Kansas of trees adapted to that part of the country, it would be much better than hauling them there from the East. He is perfectly right in that, and I could wish every success to the undertaking, especially if they can be grown there as easily and cheaply as they can be grown here. But he says, "the Sugar Maple does not grow well or has not adapted itself to the climate of Kansas," —and on the whole he does not consider it a safe tree to plant in this country. He jumps at a very sweeping conclusion in this—in face of the fact that it is so extensively cultivated as a shade tree, and is already producing one-twelfth of all the sugar made in these United States. As to shipping long distances there is some show of reason in that, even with our rapid system of overland railroads, but he must recollect that nearly all our nursery stock has to be shipped near or far, and for several years we have been importing and shipping trees, etc., from Europe over the great Atlantic. But the objection about careless handling on the part of the settler is no argument at all, for that sort of people would handle their home grown stock just as carelessly as they would ours.

Now we have grown thousands of trees in the Adirondacks by merely brushing and clearing the ground just before the seeds fell, and then stirring the ground or raking it over afterwards. The ground is suitable, and there is no trouble in collecting the seeds, for many sorts at least, which is quite an item; and the partial shade affords them shelter from the direct rays of the sun and they thus grow very fine.

Mr. Bassler and others may take a hint from this if they find it of any service to them in their different localities. We only wish to see the good work progressing and to render any assistance in our power to so worthy an object, and to one promotive of so much public good.

Chambersburg, Trenton, N. J.

[When Mr. Bassler used the words "this country" he was, we suppose, referring to Kansas only. The Sugar Maple does fairly well in Iowa.—Ed. G. M.]

EDITORIAL NOTES.

THE ARNOLD ARBORETUM.—Director Sargent reports that about 70,000 trees and shrubs have been planted the past year. Pits ten and twenty-five feet square, filled with good soil, have been prepared, which will give the trees long life. In America a tree on poor thin soils gets past its best within a hundred years.

SCRAPS AND QUERIES.

NORTHERN RANGE OF THE PECAN HICKORY.—Mr. C. B. Paddock, Albany, Ill., writes: "On the northern limit of the Pecan, it may be of interest to note I have frequently seen the matter mentioned and have never noticed that any one had seen it further north than between St. Louis and Quincy. Last fall I was shown a few nuts by a person on whose word I should rely, who declared they were gathered on what is locally known as the Wapsie river bottoms, properly, I suppose, the Wapsiepinnacon river. This river comes into the Mississippi river a few miles below here, say twenty or twenty-five miles above Davenport, and the locality where these trees are found is some twelve or fifteen miles west or southwest of Camanche, Iowa. Two or three other persons have since assured me that Pecans grow in the district described."

THE HARD MAPLE IN KANSAS.—Mr. C. B. Paddock, Albany, Illinois, notes: "On page 19, January number, 'Forest trees for Kansas,' the writer shows how hard maple grows in the West. A number of years ago I wrote you a note of experience with them, which agreed with what the writer of the article alluded to says; so will say further, my trees which were grown from seed by myself, and are now thirteen years old, are from ten to twelve feet in height and the tree from which the seed was gathered, though only about ten inches through at the base and thirty feet or less in height, has not increased noticeably in size to my knowledge in seventeen years."

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

WILD FLOWERS OF FLORIDA.

BY F. J. VOGEL.

According to promise please find enclosed seeds of the sweet potato (white Barbadoes); also an immature plume or tassel of the sugar cane. This will give you some idea of the beauty of the cane tassel. Was grown on my place, but did not come to perfection on account of the severe white frosts of 26th and 27th of November. I cut this out of the top of stalk. There were no developed plumes or tassels in this vicinity this season. Find also seeds of a perennial climber known here as "The Beauty of Florida." It belongs to the order of Convolvulaceæ. The leaves are finely divided. Flowers, white, rose colored throat. Is not plentiful. I cannot find the correct name for it. There is also a climber growing along the banks of the St. John's river, called the "Blazing Star;" star shaped and of brilliant crimson color. I have never been able to get a specimen of it yet. The Aster is in its glory now, climbing or rather straggling through the bushes with its many discs of rose and light purple, with now and then one of a bluish purple. They delight in the deep moist soil, and somewhat help to relieve the monotony of the green along the banks of the streams. There are occasionally places where there is no timber. Long stretches of yellow, composed of Golden Rod (Solidago) and Coreopsis, with here and there a tall cabbage palmetto as a sentinel to keep off intruders from this mass of yellow. There is an ever changing panorama in this South Florida. The lofty and graceful cabbage palmetto indicates good land, and it only grows abundantly in moist ground, with numerous shrubs, trees and climbers as attendants. Here you can find the Gelsemium sempervirens—yellow Jessamine—in all its glory, filling the air for a long distance with its delightful perfume; then, again, there are long stretches of nothing but (Saw) dwarf palmetto (Sabal), and when in bloom presents a beautiful appearance with its long branching flower stalk and pale yellow fragrant flowers. The bees are in their glory sipping the nectar therefrom. Palmetto honey is the pride of South Florida. Again there come patches of Vanilla plant, Liatris odoratissima, also called Deer Tongue, with bright purple flowers and the faint scent of Vanilla. The odor is very perceptible late in fall or winter, with a carpet of Spaghum and Stag's Horn fern; and the Evergreen huckleberry with its small shining leaves and white flowers tipped with red, followed with a deep black berry in large clusters, sweet, and much sought for pies and preserves. And perhaps a few yards distant is the Dahoon holly with its clusters of bright red berries and with an occasional Swamp Maple with yellow, purple and crimson leaves; and in the back ground the white Bay Magnolia glauca, with silvery green leaves and fragrant white blossoms. The Andromeda delights to grow in the shade and such company, with its beautiful white bell-shaped flowers. On and along the lakes and ponds—there you find the white and yellow water lily, basking in the sun. On a log or fallen tree you may see the bug-bear of the northern tourist, the alligator, whose teeth are so much sought for as ornaments, as mementos of a trip to the land of mammoth mosquitos and alligators.

Lake Maitland, Fla., December 24th, 1886.

THE "PEPINO" OR MELON SHRUB.

BY GUSTAV EISEN.

Under the heading of "The Melon Pear," I find in your January number a short account of this fruit. As I was the introducer of this fruit to this continent I may be allowed to say something in the matter of "suspicious introduction." The Central American name of this plant is "Pepino." Under this name it is known everywhere in the Central American high lands, and under this name only. But as "Pepino" in Spanish also means "cucumber" it was thought best to give the plant an English name. I suggested the melon shrub, but through the error or the wisdom of a printer the name was changed to melon pear, which I confess is not very appropriate, but still not less so than pear guava, alligator pear, rose apple, strawberry guava, mango apple, custard apple, etc., all names simply indicating an endeavor to find an English name, recalling certain qualities of a tropical fruit. None of these need to taste of "suspicion" any more than the high sounding names of new strawberries and grapes, which are daily introduced and advertised. In my late catalogue I call the fruit with its native name, or "Pepino," and trust that it will escape the observation of the continental Spanish critics. As to the value of the fruit and the success of it in the States only time will tell. The fact that I found the plant growing only on the high land where the temperature in the shade seldom reaches 75° Fah., suggested to me the probability that it would fruit in a more northern latitude. In California it has proven a success in the cooler parts, such as in Los Angeles City, in several places in the coast range, and will undoubtedly fruit in many other localities where it is not too hot. In the interior valleys the summer is too warm, and my plants begin to ripen fruit first in late fall when frost is imminent. There the first year's fruit was nearly ripe when a frost occurred.

Only very few fruits had ripened, and I decided to pick the balance unripe—about 1000 fruits. This was the 15th of November or so about. I wrapped each fruit in paper and stored away in cold room. About the middle of February the majority were ripe and proved very fine, though not quite equal to those I had myself grown in Guatemala. The California fruit was much larger—the largest the size of a goose-egg, the smallest again of the size of a plum. But they were somewhat inferior in the way of acid, which in the perfect fruit is of the most delicious kind, allaying the thirst for hours during the hottest day.

My friend, the late Mr. J. Grelck, of Los Angeles, had a plantation of 10,000 Pepinos, which grew and bore well in Los Angeles City and sold considerable fruit. I do not think the fruit will be a success everywhere, but in cool and frost-free places where the fruit can set and ripen early I believe the Pepino will be found profitable.

In pulp and skin the Pepino resembles somewhat the Bartlett pear, but in taste more a muskmelon; but has besides a most delicious acid, entirely wanting in melons and quite peculiarly its own. In warm localities this acid does not develop, and this fact is the greatest drawback to the success of the fruit. The fruit has no seed, as a rule. And in all I have found only a dozen seed—and those in fruit which came from Salama in Guatamala, a place rather too warm to produce the finest quality of the fruit.

The botanical name of the Pepino is not known to me with any absolute certainty. The same was described by the Franco-Guatemalan botanist, Mr. Rousignon, as Solanum melongena Guatemalense, but it is to me quite evident that this Solanum is not, nor is it closely related to the S. melongena or egg plant, which latter is a native of Central Asia. The Pepino is probably a native of the Central American high lands, and appears to have been cultivated by the Indians before the conquest by the Spaniards. *Fresno, California.*

[A plant received, shows it to be different from G. melongena.—Ed. G. M.]

WILD FLOWERS OF DAKOTA.

BY JOHN W. DUNLAP.

I found Mentzelia ornata growing on the bank of the American Creek, near Chamberlain, Brule co., Dakota. It was just at sunset and it had fully expanded its large white and fragrant blossoms, for it is a real night bloomer. This being the first time I had seen it, I felt like a boy with his first boots—highly pleased. I have cultivated it since and it makes a fine garden plant with its delightful fragrance. Those who desire to botanize this locality should take, in addition to Gray's Manual, the Synopsis of the Flora of Colorado, by Thomas C. Potter and John M. Coulter. This will enable them to determine the names of whatever they may discover, with few exceptions. The bluffs around Chamberlain rise to the height of 475 feet above the Missouri River, and from the nature of the soil, the ravines are of extraordinary depth, giving shelter and shade to many plants and shrubs that I did not expect to find there. A large bed of Yucca is found there, which is different from filamentosa, and has a striped leaf like angustifolia. It was in full bloom at the time I visited it. Many of the flower stalks are 7 feet high.

I also found the Opuntia Rafinesqui and Missouriensis, Solanum triflorum and Solanum rostratum, Œnothera albicaulis and O. serrulata, Gaura coccinia and a very pretty Verbena, with fine cut leaves like the old Imperitrice Elizabeth, which might be useful for florists to cross and breed hardy varieties from. It would be too long a list to encumber your valuable pages with, to give you all the plants that grow there, so I will confine myself to a few shrubs, such as Rhus aromatica, Shepherdia argentea, Symphoricarpus occidentalis, Amorpha fruticosa, and Glycyrrhiza lepidota. No one who visits Dakota in search of plants can be disappointed. The prairies are in a blaze with showy Liatris, Gerardia, Cirsium and Helianthus, several Psoralias—amongst others, esculenta, and the modest Oxalis violacea. Should the individual who visits Chamberlain not be a plant enthusiast, he will, nevertheless, be well repaid for his journey. The scenery is at once beautiful and picturesque. As you stand on the bluffs, back of the town, you are at an elevation of 1,500 feet above the sea level. You can trace the winding course of the grand old Missouri for miles and miles, and tepees of the Brule Indians are visible in the distant southwest. Here, we may say, we are the dividing line of civilization and savage life. *Milwaukee, Jan. 16th, 1887.*

BEAUTIFUL WEEDS.—CIRCÆA ALPINA, AND EUPHORBIA PEPLUS.

BY M. D.

"Low smooth and weak," says Gray, when speaking in his Manual of Circæa alpina, and "common northward."

The little heart-leaved plant is said to be not over eight inches in height, and of the dozen specimens that, nearly a year ago, I found in one saucer-shaped damp depression, about the width of a wash-tub, none were that.

Pressed, it makes a very pretty and manageable tenant of the herbarium, and shows better there; is less likely to be overlooked than in the shady woods where it prefers to grow. My knowledge of the plant is confined to the few specimens above mentioned, which were in flower and fruit near this city on the 3d of last September.

A less shy plant, but more rare, perhaps, is the diminutive Euphorbia peplus. A large yard on West Main Street in this city, is so largely filled with it that it would be certain to detain the plant hunter, should his eye catch sight of it. It is, doubtless, quite a delicate herb; indeed, it was so spoken of by the lady occupying the house in the lot. Blue grass, if allowed freely to grow, would perhaps crowd it out; and I noticed that it preferred to follow the but seldom used carriage way, and spread under shrubbery and where the ground inclined and was so broken as to easily receive the yearly crop of seed.

I was told that a few came to view the plant, and that it could not be found elsewhere in the city. This latter belief is a slightly mistaken one, as I have seen single specimens of it on the footway margins of several of the streets, and in florists' yards. Except where massed, as in the yard mentioned, it might at a distance be easily mistaken for Oxalis stricta, its general height and color being similar, or for a nearly erect, broad, and thin leaved form of Polygonum aviculare.

Rochester, July 6, 1886.

HYBRID PLUMS AND PEACHES.

BY H. F. HILLENMEYER.

I read with much interest Prof. Van Deman's note in your last issue, in which he suggests that the Blackman plum is a hybrid between the plum and peach.

The possibility of such a hybrid, the hope of obtaining a fruit with the combined excellencies of both, with perhaps the down of the peach to give comparative immunity from the attacks of the curculio, seemed to me worthy of experiment, and in the spring of 1880, I spent an afternoon fertilizing Wild Goose plum blossoms with Alexander peach pollen. The emasculation was carefully performed, but after pollinization the flowers were not sequestered.

The seeds of all the fruit borne upon the branch under consideration, were carefully planted, and subsequently moved into nursery row. All the seedlings save two were evidently plums, pure and simple. The two exceptions resembled the peach as much or more than the plum, and were more vigorous and erect, without tendency to bear thorns. They were moved to the orchard and almost without exception visitors to our grounds have pronounced them peach trees.

Through all these years it has been a pleasant fancy to think that the experiment had been made in an untrodden field, and the time when the trees should be judged by their fruit was one of anxious anticipation. The reason that no fruit has yet been borne, is because in Kentucky the winters of 1883, 1884 and 1885 have been sufficiently severe to destroy the peach buds, and these seem to be no more resistive. Not a flower has yet expanded, though the trees were well supplied with fruit buds both in 1885 and 1886. American plums endured the lowest temperature known in Kentucky, on January 5th, 1884, without the loss, apparently, of a single fruit-bud, and why the buds of these two trees were then destroyed and again in 1885, at a temperature not so low, rather favors the idea that they are hybrids. At this writing, the buds are uninjured, and the hope is entertained that fruitage may add conclusive testimony.

Lexington, Ky.

[We place this communication in our Natural History column, because we regard it as a valuable contribution to science. For many years we have read of "hybrids" between peach and plum, but none have resulted from actual experiment, but were simply "supposed to be hybrids, because peaches and plums were growing near each other." We could not forget that such a tree as the peach, which can give us a nectarine now and then, would be fully able to perform the pranks detailed, without hybridization, and from bud variation alone.

The subject is so interesting that cumulative evidence is still desirable, and we hope experiments by emasculation and careful manipulation will still be made, and the results reported. Would not some extra protection, to prevent the flower buds from extreme cold, be practicable? –Ed. G. M.]

LECANIUM HEMISPHŒRICUM, OR "HEMISPHERICAL COCCUS," A NEW ENEMY TO CUCURBITACEOUS PLANTS.

BY PROF. S. S. RATHVON.

Coccus is a generic term—the typical genus of the great family, coccidæ, which includes those insects usually designated "bark-lice," "scab-lice," "scale-insects," etc., with their various adjectives. Whilst making my observations last summer, on the habits of the "Northern Lady-bird" (see November Number GARDENERS' MONTHLY), I noticed a single specimen of a very convexed, chestnut brown coccus, nearly the size of half pepper corn, upon the same species of vine infested by the lady-birds, but not in exactly the same locality, although only about twenty feet from it. I made very little account of it at the time (July 5); it being on an upright of the trellis I supposed it was a dead subject of the previous year. Two or three days afterwards I was surprised to find it had shifted its quarters and was located on a leaf-stem, for it is unusual for these insects to locomote after they once have fixed themselves and attained maturity. Within one week thereafter there were at least five hundred of those insects on that vine. They were of different sizes and colors, and were mainly located on each side of the midribs of the leaves, and on the stems, but only a few on the main vines. None were of clear, positive colors, except the adults, and they were a smooth, glossy, chestnut-brown, slightly varying in shade according to age or state of development; also very convexed. These young resembled small species of cassida (coleopterous insects allied to the lady-birds), or like a minute tortoise with the upper shell ramified by veinations, and indented around the margin, and pinkish, greenish and whitish in color, but somewhat tarnished. They were all gifted with marked powers of locomotion, and changed their positions very often and very quickly, especially in the heat of the day. As in the case of the lady-birds, I permitted them to multiply to test their powers of destructiveness. Before the 1st of August there were thousands of them, and by the 1st of September, or earlier, including the quite young, they had increased to hundreds of thousands, if not millions. Many parts of the main vines, from one to two feet in length, were so completely invested by them that you could not stick a pin into it without passing through one or more of their bodies. Other parts, for a yard or more in length, had one or two uninterrupted rows upon them, and many of the leaves and leaf-stems were partially covered by them. Earlier, these glossy brown convexities were filled inside with small whitish eggs, and even in this condition they had the power to slowly move about from place to place. The whole interior was an egg matrix or ovarium; the body consisting merely of an oval shell above, and just sufficient tissue beneath to admit the articulations of a beak, six delicate whitish feet, and antennæ. Later, from these tiny eggs were exuded as many tiny insects, and these began to scatter as soon as they issued from under the body

of the now defunct mother coccus—most of them only to perish. I attempted to count the number of young produced by one female, but I gave it up before accomplishing my purpose. They were so very minute, and scattered so rapidly that I abandoned it; but, judging from a count I once made of an allied species that infests the maple, linden, grape-vines, etc., I feel that I am making a low estimate when I say the number for each female is not less than five hundred and may be many more. On a small piece of the vine six inches in length were two hundred of the adult females, each capable of producing five hundred young, which would give us one hundred thousand, or two hundred thousand to a foot, or twelve inches. Now, there were at least twenty feet so infested, which would foot up four millions in about two months, to say nothing of those that had matured earlier in the season, hatched their young, and then dropped off the vines to make room for others. Of course many of these minute insects never reach maturity, but perish in their infancy; and, doubtless, in the economy of nature their perishment is anticipated as essential to nature's general harmony. But those that do survive are capable of inflicting a great depletion upon the vegetation they infest. This vine became enervated sooner and more rapidly than the one infested by the lady-birds, although the insects confined themselves to pumping out the juice only. What they lacked in destructive energies they made up in numbers. It is these little things that are often the worst on account of their numbers and invisibility.

Now, this was a cucurbitaceous vine upon which they were located, and this suggests the query, What is to prevent them from infesting other vines of the same family, the cucumber, the muskmelon, the canteloupe, and water-melon, for instance? Their partiality or love for this plant is emphasized by the fact that, although a grape-vine was in immediate juxtaposition, and their laterals intertwined, I only detected two or three adults—and none of the young—on the leaves of the grape-vines during the whole season. I have frequently found species of these prolific coccidians and their allies, on oaks, plum, peach, apricot, apple, and other trees, but I never noticed them before on succulent vegetation or annuals. This location may have been one of the blunders, which even the insect world is not free from. A succulent plant that grows up from a seed in the spring, and dries up and falls to the ground in autumn, is not the place to perpetuate sap-sucking insects. These insects kept hatching out and traveling over the vines and elsewhere, up to the month of October, and from the characteristics of these little atoms, as exhibited during the summer, vitality could not be sustained without being supplied with "green food," and a living woody branch for their winter quarters. My impression is, that all this late hatching perished, except perhaps a fortunate few who may have found their way into a greenhouse, or a private conservatory. As long as the eggs remain unhatched and are favorably located, the winter's cold, no matter how prolonged, would have no injurious effect upon them.

The case is similar with the silk-worm eggs packed in China and Japan; sent across the Pacific ocean to San Francisco; from thence across the American continent to New York, and again from thence across the Atlantic ocean to Europe, to be distributed among the silk-growing countries there. As long as the non-incubating temperature remains intact, the enterprise is successful; but, should the temperature, from any cause, be raised to the point of incubation and exudation, the young brood would inevitably perish, and the enterprise fail. Never having noticed this species under similar circumstances before, I became doubtful of its specific identity, hence I sent specimens of it, and also notes of my observations, to the Entomological Bureau at Washington, D. C., and was informed that it was a common species, infesting greenhouse plants, especially further south, and that my record of finding it in the open air, in a latitude as far north as Lancaster, was an interesting fact in its history. It is one of the few species of the coccidæ, of which the adults have the powers of locomotion, and this adds to its noxious character by increasing its ability to spread. It appears also that the male of this species has never yet been discovered—at least, it has not yet been identified. I have never heard of it, nor have I ever seen any published statements of it, as a greenhouse pest in Lancaster. How it happened to invade my premises is involved in conjecture. Possibly some member of my family may have purchased an infested plant in market, without knowing it to be infested,—possibly not. This supposition is not only possible, but also very probable, especially in the first stage of the insect after it comes from the egg. It looks like a minute grayish atom of dust; invisible to the naked eye, to about seventeen in twenty, and hardly definable under a pocket miscroscope. Its length is scarcely 1 mm., and its breadth about half that quantity. Its form is oblong-oval, a little larger at the anterior than the posterior end. The latter is armed with two white, bristling filaments, and the antennæ are armed with a few lateral bristles. Their color under a microscope is a dirty white, but to the naked eye they are dust-gray. Of course, it is impossible to say, without a peradventure, that these insects absolutely cannot bridge over the frigid chasm of winter, so far as the late hatched young are concerned; still, as many of the adults transported themselves to other situations, on the wooden trellis and on a contiguous fence, we will have to wait for another season before we can determine or not, their survival of a northern winter in the open air. Should the "worst come to the worst," as a cucurbitaceous pest, the remedy to destroy them would be very simple and easily applied. A liquid spray of Paris green, or even of soap-suds or tobacco water, would certainly destroy all the young if applied just when they begin to scatter, although it might have little effect on the adults; but these die of their own accord as soon as the eggs are hatched, if not before. As they continue their propagations during two or three months in summer, the proper time can only be determined by close observation, when to apply a remedy.

CATTLE EATING CACTUS.

BY REV. L. J. TEMPLIN.

It may seem strange to those who are acquainted with the spiny nature of most species of cacti, that cattle should attempt to eat them. Yet, such is the case in this country, where many species of these plants abound. The kinds mostly eaten are the Opuntia Rafinesqui and O. Missouriensis. These are frequently eaten during the winter and spring, when the grass is very short. The animal very cautiously takes the broad, leaf-like stem between the tongue and the upper front teeth and gently drawing upward, manages to rub the spines off the upper part of the stem. It then takes hold of this part so freed from spines and gently pulls till the stem is detached from the plant, then rubs it back and forth on the ground till all the spines are broken off when it is taken into the mouth and eaten with a relish. We also have a species of cactus growing in profusion in the parks of this country, popularly called "Buck-horn" cactus, (Opuntia arborescens) that grows from 3 to 5 feet high and is much branched. This, by the way, is the species from which the popular "cactus walking sticks" are procured. This cactus, during the early summer is covered with bright crimson flowers, followed by pears or seed pods ¾ to 1 inch in diameter, and 1 to 1½ inches in length. These seed pods are eaten with avidity by cattle during times when the ground is covered with snow so that the grass is inaccessible. The seeds are small, hard and dry, but the pod is a thick mucilaginous substance, that, when chewed, has much the flavor of the bark of the slippery elm, and is, I should judge, quite nutritious. Animals show much dexterity in picking off these seed pods, at the same time avoiding the formidable spines with which the stems are armed to their very extremities. All these plants are doubtless of a palatable and nutritious character, and were it not for the numerous spines with which they are protected they would soon all disappear from the stock ranges of the west. But whether these spines have been developed by a long process of natural selection or were originally given them for their protection, "no man knoweth to this day," notwithstanding a vast amount of useless speculation.

Canon City, Colorado.

[In some parts of Mexico, cactuses are regularly fed to cattle, the spines being destroyed by light flaying over a fire. This agricultural cactus is called there nopal. Botanically the cactus is closely allied to the gooseberry and currant, and the fruit quite as wholesome—the spines and aciculi being the great trouble. The "Barbadoes gooseberry," and "Indian Fig" are species of cactus.—Ed. G. M.]

EDITORIAL NOTES.

A Botanic Garden in Southern California.—A movement is on foot to establish a Botanic Garden at Los Angeles. No better spot could be selected. A large number of plants would thrive in the open air, for which houses would be required in a more northern clime. It is hoped that 100 acres will soon be secured for the purpose. Mr. Charles Emory Smith, an energetic and intelligent young man from the east is working it up, and is meeting with fair encouragement from those who are fully able to accomplish the task.

Currants and Grapes.—It is well known to grape growers, especially those who grow grapes under glass, that often there are berries not half the size of the normal berry, and seedless. Some varieties—as for instance, the grape that produces the currant—rarely, if ever, produce the larger berries with seeds, as in the ordinary raisin making varieties. It is conceded that even these small berries would not be berries at all, unless pollen had in some way acted on them; but why it

should act that far and yet fail to produce seeds, the writer of this could never understand, and nowhere in his reading has he fallen on any explanation.

The January number of the *Botanical Gazette*, has now the following: "The fact that some ovaries swell and ripen without ripening seed, finds an explanation in the suggestion that the pollen-tube lives as a parasite upon the cells of the style, and so causes an extra flow of nourishment."

We fear this explanation does not make the matter clear enough for many to get the full idea. We think our neighbor would render good service to vegetable physiology by a fuller account of this new suggestion.

SCRAPS AND QUERIES.

Spring-time in Georgia.—A correspondent at Savannah, under date of January 30th, says: "Roses usually in bloom through the winter; from last of August to first of January, no rain here. Since the last of November, until within a week, the weather has been the coldest ever known here continuously. Yet, now spring seems to have come to stay, as we are having showers, and vegetation generally is starting. Violets, Narcissi, Camellias, etc., are opening, and the Jessamine (Gelsimium sempervirens) is showing the yellow buds. Irish potatoes planting and hardy seeds being sown.

"From all I have heard this is a remarkably poor place for horticulture, though the greatest abundance of the finest fruits and flowers can be grown, with little care; yet no good market."

[Our correspondent by his last remark, speaks of course of commercial gardening, and fruit and vegetable growing for market. For horticulture as a means of pleasurable recreation, his own letter is enough to make us ice-bound northerners envy the people of Savannah. Here we have spring no sooner on us than we are rushed into summer; in that latitude it would seem that spring-time might last half the year. And from the commercial aspect, it is not easy to see why profitable gardening might not be followed. Our own impression is that in these localities too much attention is given to looking for northern or distant markets, and too little to developing local trade. Wherever markets are far away the chief profits go to transportation companies.—Ed. G. M.]

The Sweet Potato Flowering in Illinois.—Mr. C. B. Paddock, Albany, Whiteside county, Ill., says: "I would add my mite concerning the blossoming of sweet potatoes, as I have not seen any account of their blooming so far north (nearly the 42nd degree of north latitude). About eight years ago I had plants of several varieties, from a party in Champaign county, I think, in this State, and there were two or three varieties of red sweet potatoes and these red kinds had many flowers, usually white or whitish, with more or less of pale violet on the lower part or base of tube; the tube being longer than in Morning Glory, more nearly like Stramonium; the Nansemond and other yellow kinds did not blossom, nor have I ever seen any of the flowers except that one season."

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

MISTLETOE MEMOIRS.

BY WM. T. HARDING.

As the pursuit of useful knowledge is at all times commendable, and not only does it elevate the individual who encourages it, but is one of the most certain and direct means by which nations are exalted and human nature is dignified; the progressive people, who happily acquire and foster it, are in possession of the greatest boon man can possibly enjoy, or confer upon his fellow creatures. For whoever imparts to others a knowledge of that which tends to mentally elevate, or morally improve them, or, in any sense makes them better or wiser, are assuredly benefactors to their species. Pure philanthropic deeds of so high an order are like unto the saintly acts of "Benignant Mercy," or the loving ways of her angelic sister "Sweet Charity," whose benevolence blesses all who receive, as well as them who give.

And, as an anxious learner, desiring to profit from the rich and ample stores of wisdom of those who are fortunately better informed than myself, and which so many intelligent writers generously give to the readers of this magazine, and to whom, I, in particular, am so much indebted for their uniform kindness, I feel constrained, in like manner, to make some returns for their favors, and which I fear is at best but a poor exchange for benefits received. And with equal force do these remarks apply to the courteous Editor, whose long experience and profound erudition eminently qualify him to give sound advice to enquiring friends, through his common-sense editorials and polished essays. And although unable to give full equivalents for what I get, I nevertheless, strive to liquidate the obligations I am under, as best I can; and when addressing him, often feel how applicable would be the regretful, or apologetic language of the poet, when offering my effusions to him, were I to adopt his expressive diction and say—

> " I give thee all, I can no more
> Though poor the offering be."

And thus, it sometimes comes to pass, when tempted to tell what I know about Nature's pleasant ways, as I understand them, that I make you my confidants, and divulge her secrets, if secrets they be, to whomsoever lends a willing ear. For, as Carlyle says, " there is a mystery and majesty of Nature, take her as you will."

And now, kind reader, it is the singular parasitical bush of antiquity, the dear old Mistletoe, long prided for its peculiar virtues, by the young of both sexes, in bygone days, and which, I ween, about Christmas tide, are still as potent now, and of which we will pleasantly discuss. And while the delightful pictures of the past remain unfaded with time, in fancy I can again see the bunch of Mistletoe conveniently suspended during the gladsome occasion, in some friendly hall, for those who desire to enjoy the kissing privileges they are entitled to beneath the inviting bush.

This popular and pleasant old custom, which time and natural inclination sanctions, is not likely to fall into disuse or abeyance; for as long as there are tempting lips to kiss, will the " Mistletoe Bough," and its happy associations, never become obsolete or forgotten.

Washington Irving, the most sentimental of all American writers, in his charming description of Christmas time in England, speaks of it as " honest and genuine enjoyment; " and alludes to " the Mistletoe with its white berries, hung up to the imminent peril of all the pretty housemaids." And whoever regards the felicitous events of the past, as happy days gone by, even should they be in " the sere and yellow-leaf," will sometimes recall the pleasant recollections which cling to them still. Such mirthful gatherings of happy mortals —which were wont to assemble round the cheerful fire, to " join in the festive dance or joyous song," while furtive glances were slyly cast at the Mistletoe on the ceiling, with a delightful expectancy of getting under it,—will ever retain their mark, as red-letter days, in the calendar of life.

A poetical description of Christmas Eve in feudal times is graphically given in the following lines by Scott:

> " On Christmas Eve the bells were rung;
> On Christmas Eve the mass was sung:
> That only night of all the year,
> Saw the stoled priest the chalice rear.
> The damsel donned her kirtle sheen;
> The hall was dressed with holly green:
> Forth to the woods did merry men go,
> To gather in the mistletoe.
> Then opened wide the Baron's hall
> To vassal, tenant, serf, and all."

This ancient evergreeen bush, the close companion of " the brave old oak," has a history which reaches far away into the dim and misty past. To the Greeks and Romans it was well known; and Pliny tells us, "the Gauls held this plant in the greatest veneration, and their magicians, whom they call Druids, consider nothing more sacred." And "the Persian magi gathered the mistletoe with great care, and used it in their religious ceremonies." The magical properties of the mistletoe are noticed by Virgil and Ovid; and the poet Lelius mentions it as "one of the things necessary to make a man a magician." To Cæsar and Pliny we are mainly indebted for the slight information we possess of this ancient pagan priesthood, who, although they worshipped Apollo, under the name of Belinus, supposed to be identical with Baal of the Phœnicians, their chief deity seems to have been Mercury. A quotation from a magazine of 1791 says, "the guibel, or mistletoe, is supposed by some to have been the forbidden tree in the Garden of Eden; and adds, that hence probably arose the custom of kissing under it at Christmas; though this appears to be an unwarrantable conclusion."

There is much speculation in these late days as to the exact significance the idolatrous Druids attached to the mistletoe's uses in their cruel and superstitious rites or orgies, before the emblem of Christianity was raised where the ancient Britons ignorantly worshipped their mythical gods. But that they and our Saxon ancestors regarded it with a senseless veneration or stupid awe in their absurd practices, and believed it would preserve them from witchcraft, history informs us, are authentic facts. And while thankful we are living in happier times, methinks what a wondrous change has come over the scene since the time when the uncivilized Briton with his naked legs and arms painted blue, and a wild beast's skin thrown over his shoulders, roamed about, a veritable heathen, beneath the umbrageous boughs of the majestic oak in Albion's forest shades.

That this peculiar plant has been looked upon as no ordinary object from time immemorial, both by pagans and Christians, we have the strongest evidence; and however much our ancestors may have regarded it, their descendants seem to exhibit no lack of interest in it in our own time. Its economic uses are but few, although at one time it was supposed to possess medicinal properties which are not ascribed to it now. To our pleasant, sylvan, feathered friends, however, it gives both aid and comfort, inasmuch as it affords nutritious food to several species; the glutinous berries of which are eagerly sought for when inclement wintry weather cuts off the supply of other kinds. So it appears we are not the only bipeds who still find a use for mistletoe. And as a plant of very singular structure and most peculiar habit, it will never cease to draw the attention of observant eyes whenever seen. In remote times it may have preferred the sturdy oak to other kinds of trees. We have abundant proof that it is by no means fastidious about the species it now selects for support, and " sticketh closer than a brother" to. Notwithstanding its many disadvantages, compared with the facilities most other forms of plant life have of multiplying with greater freedom, it is not likely to disappear from the flora as long as trees continue to live from which it may derive its nurture.

This little abnormal curio, in its struggle for existence on the arboreal giants its lot has so long been cast among, seems incapable of elevating itself upon a trunk of its own, and is thus compelled, perforce of circumstances, to seek its living upon other trees, as we frequently find it.

From Mr. John Thorp's interesting experiments of propagating the mistletoe, we learn how strongly inherent are its propensities to live upon almost any tree or shrub capable of supplying it with plant food congenial to its nature. The last experiments of that kind the writer made, were in South Carolina, in 1860, upon a couple of good sized orange and lemon trees, an Illicium, several Camellias, a Pittosporum, a Nerium, a Laurestinus, and a Banksia rose, which were growing out of doors, as they usually do in that section of country. And when he left there, they all seemed to be growing. But of their subsequent history he is unable to give any account; yet, doubts not but they are living, from the readiness with which the mistletoe berries seemed to germinate wherever inserted.

Recognizing as reliable, the many accounts intelligent observers furnish of its general aptitude to appropriate for subsistence and security, the most convenient trunk or branch, with the greatest freedom possible, of any kind of trees; it will not surprise the reader, it is presumed, when informed that he who records these facts has seen it growing in the Southern States upon Pinus australis, Celtis Mississippiensis, Magnolia grandiflora, Viburnum prunifolium, Castanea pumila, Persimmon, Tupelo, Maples, and various kinds of Oaks. Of the last named family, it was mostly found upon Quercus virens, Q. nigra, Q. alba, Q. phellos, and Q. aquatica. Though usually found upon these five species, there is no reason to suppose it does not find a resting place upon other kinds.

I am not aware of ever having discovered it on the apple tree in this country, as we may find it almost in every orchard or garden in Europe, and which it seems to prefer there to other trees. In that hemisphere, instances are common where it may be seen flourishing upon the Apple, Pear, Hawthorn, Sloe, Willow, Poplar, Elm, Maple, Hazel, Hornbeam, Ash, Scotch Pine, Olive, and occasionally the Oak. And no matter upon whatsoever kind of tree or shrub it may fasten to, it never fails to interest the intelligent beholder wherever seen.

Professor Meehan wisely observes. It adapts itself to the changed conditions our planet has experienced, which long lapses of time have brought about during the last two thousand years and upwards, when, at that distant period, it seems to have exclusively united with the Oak. He says: " Now climates must of necessity change, and the climate of Great Britain cannot possibly be the same as it was when the Druids cut the Mistletoe from the Oak trees, and with the climatic change there will naturally be a change of trees by the Mistletoe, to suit the new conditions." And it is thus we find it now, under the new conditions, affiliating without apparent choice or selection, with trees of many kinds.

With these facts before us possibly some enterprising nurseryman in this country may find it to nis advantage to prepare small trees for sale, upon which this singular plant is growing, as several of that profession have done beyond sea.

With all the historic renown which has clung to the Mistletoe for ages past, together with the more pleasant associations which have so long invested this ancient parasite and which are likely to survive all those who may read these remarks for thousands of years after they have passed away to "the better land," it will still find favor with posterity. For as long as man continues to leave his foot-prints on the sand, and the Mistletoe remains to cast its shadow upon the soil it seems forbidden to touch, will our existing race admire and cherish it.

And while paying a passing tribute of esteem to this comely little bush I have so fondly remembered from childhood's happy hours, I deeply regret to hear it is charged with being "the chief enemy" of the Water Oaks at Aiken, S. C., or elsewhere. And are we to infer from so uncanny an allegation that it is "the chief enemy" among trees like "the evil one" of unsavory repute among mankind? However that may be, I honestly confess I feel somewhat reluctant to henceforth look upon what I have hitherto considered a harmless, innocent-looking little evergreen, as the ligneous ogre of the present time, even should it when pressed by hunger quietly devour a few unresisting trees in its laudable endeavors to live. And with strong prepossessions in its favor, I am unwilling to believe it is such a vegetable vampire as to cause unnecessary alarm to the many true lovers of sylvan beauty. Then take comfort with me, ye gentle ones in whom there is no guile, and know that should some few weak trees succumb to the too vigorous embraces of the parasitical company they keep, there will still be millions left to supply the places of the defunct ones so that they and the Mistletoe may co-exist together again.

And as these fragmentary remarks are drawing to a close, faithful memory vividly portrays many a handsome and fruitful Apple tree upon which I have seen the pretty pearl-berried bush attached in the fertile, well-kept, quaint old gardens of England, and which to wilfully injure would have been an unpardonable offence impossible to atone for. With feelings bordering upon reverence for it we can hardly wonder that it should be so when we consider how much interest or curiosity it has excited in the minds of the junior members of the family, generation after generation, as each have had their attention called to it in the days that are gone, and of whom it might possibly bring back to remembrance after many rolling years happy reminiscences of beloved, vanished forms, whom Death has gathered in.

While thus lingering upon these pleasant Mistletoe recollections, faint pictures of half-forgotten events seem to reappear on the fading canvas again, and give transient glimpses of an ivy draped old Oak, spreading its rugged arms over a mossy crag, from beneath which bubbled a cool, pellucid spring. This little bosky Dryad fountain supplied a winding, sparkling rill, which gently meandered along the grassy slope beautifully fringed with tufts of green rushes, sedges, ferns, pearlworts and crowfoot, to a picturesque pool, some thirty yards off among the bushes further down, and over which a leaning Hawthorn cast a flickering shade. To this charming bit of natural scenery I often rambled when a happy school-boy, to wade and dabble about among the water-cresses, forget-me-nots, and brooklimes, and to gather ripe sloes, blackberries, and filberts, which hung so temptingly in nutting time. Well do I remember seeing interwoven among the gnarled branches of the lichen, usnea, and moss-covered thorn, several good sized clusters of Mistletoe, and which my father, when visiting this leafy, verdant spot, first pointed out to me. After an absence of many years, I returned in 1881, when I strolled to this very romantic nook again, I verily believe I saw retaining the same local habitation the identical bunches of the old gray-green parasite once more, which I had previously noticed when a boy. And oh, how all the objects around seemed to remind me of the eventful past; and while briefly forgetting the vicissitudes I had experienced since then, fancied there had

> "Again returned the scenes of youth,
> Of confident undoubting truth."

Mount Holly, N. J., November 29th, 1886.

THE GARDENS OF ELISHA P. WILBUR, OF BETHLEHEM, PA.

BY J. F. M.

A hasty run through these grounds during the meeting of the American Horticultural Association on the 20th of January, afforded me much pleasure. It is in the city, and consequently the grounds are not large, and the chief interest is in horticultural buildings. A vegetable house for early forcing was particularly attractive. Tomatoes were ripe, and an enormous crop coming on to

succession. English cucumbers,apparently near 20 inches in length were in abundance, and beneath is a cellar in which were an abundance of enormous mushrooms. Hot water pipes go down through the mushroom beds, by which Mr. Cullen, the intelligent gardener, is able to keep the equable temperature of 60°, so essential to success in the culture of this delicious vegetable. A warm-house, which, in the literature of gardening would probably be called a stove, was devoted to a collection of heat loving plants, but particularly orchids. A large number of these curious plants were in blossom, and some large specimens of the well known Cypripedium insigne had scores of blossoms on them. The white bracted Poinsettas were here of a much clearer white than is generally seen. A remarkably curious specimen of the Screw pine (Pandanus) gives one of the houses great interest. Northampton county is the headquarters for the slate industries of Pennsylvania. Advantage is therefore taken of the cheapness of the article, to make the benches for roses and other things, out of it, which not only gives durability, but also a neatness which is pleasant to find in gardening structures.

EDITORIAL NOTES.

Cost of Water.—Circumstances alter cases. There is no more common expression than "free as air and water," and yet in California any one who can secure a good water right, has property that is worth $1000 an hour. It is much better than a gold mine. The San Francisco *Chronicle* says that in distributing water for irrigating purposes in Southern California, it is calculated that one inch of water will suffice for ten acres. One thousand dollars per inch is the average value affixed to the title to water, or at the rate of $100 per acre, although sales are daily made at from $150 to $400 per acre, said lands being absolutely worthless without water. At this figure, the value of water in San Diego county aggregates the enormous sum of $1,300,000,000; while the water of Los Angeles county, where the value is $3000 per inch, is worth $2,400,000,000.

Cooked Potatoes.—For three hundred years potatoes have been a cooking, and yet not one in in a hundred knows how to cook one properly. We never eat a sodden, tasteless tuber without wishing that there was a cooking school in every town. There are some in some towns. One of considerable pretensions exists at Auburndale, Mass. It is in connection with Lasell Seminary. If we had girls to send there we should get ourselves invited to dine. If the potatoes were properly cooked, it would be enough. Any one who knows how to cook a potato properly, has the proper foundation for all the rest.

Hyacinth Bean.—A New Jersey correspondent confirms the identification with Dolichos Lablab, and notes that he does not find Dolichos in Gray's works. This species will not be found there, as it is a native of the West Indies, and not of any part covered by Gray's Floras.

The City Councils of Philadelphia.—It may perhaps gratify many personal friends to know that the Editor of this magazine has again in the February elections been returned for a fourth term of two years to the City Councils—the governing body of the city of Philadelphia. As extremely few get elected for more than one or two terms, the compliment is appreciated, especially as no other person was nominated against him, and partisan politics are wholly set aside in the unanimous vote received.

Philadelphia is one of the few cities in the Union where the services of Councilmen remain wholly unpaid, and the government is carried on wholly as a matter of honor and city pride.

Mr. John H. Graham, of the well-known seed firm of Graham, Emlen & Passmore, also continues as a member of the body till 1888.

Mr. Barry and the Department of Pomology.—Mr. Barry has given an opinion to Green's *Fruit Grower*, that it will not be possible in the nature of things that much good can follow the establishment of the Department of Pomology at Washington. It will now be in order for the Department to prove by actual results that the opinion will have to be changed. Nothing succeeds like success.

Prof. Rothrock.—Dr. Rothrock, the well-known botanist of the Pennsylvania University, has been compelled to take a year's vacation as much as possible in the open air. He will go south to Florida, working up among the mountains during the summer, and, if the recovered health that is hoped for ensues, will give much of the information he gathers, in "Michaux arboricultural lectures" next winter.

Peter B. Mead.—This gentleman will be remembered as at one time the very able Editor of the *Horticulturist*. It is a pleasure to note that he still keeps up an active interest in horticulture, though now a long time out of the editorial harness.

A Wealthy Gardener.—Mr. Patrick Devine, who died on November 1st, 1885, was gardener to members of the Fisher family in Germantown, for near half a century, continuing his faithful work up to the time of his death. His estate is valued at $44,000, which he left to his wife.

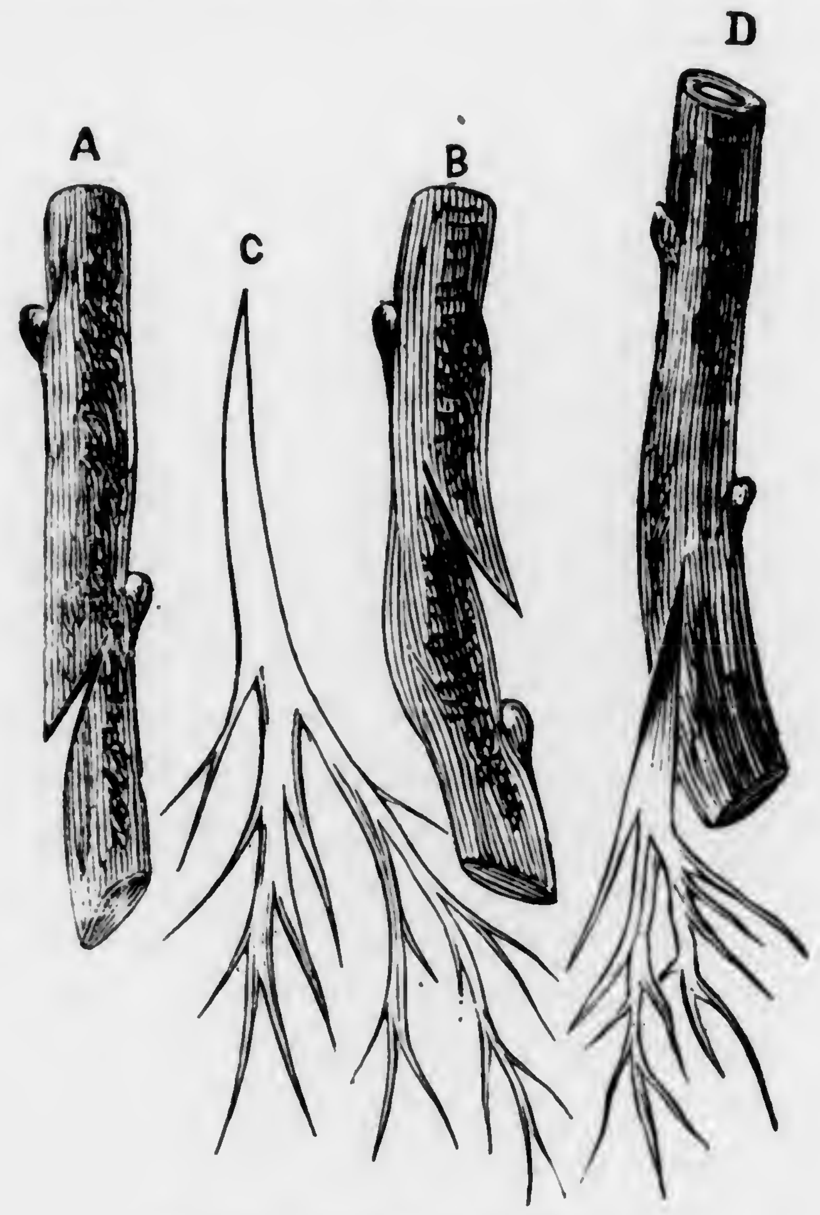
Dr. Wigand.—Some of our flower lovers are familiar with a very pretty genus of plants named Wigandia, and they will be sorry to learn of the death of the gentleman whose name it bears. He was professor of Botany at Marburg, Hesse, and died on the 22d of October, in his 65th year, according to a note in the *Botanical Gazette.*

David Pooley.—First-class landscape gardeners are not numerous, and among them Mr. Pooley's place will be missed by a large number of friends. He died on January 11th, in his 65th year. He came from England many years ago, and was gardener to Harry Ingersoll, Esq., at his beautiful seat near Philadelphia, after which he established himself as a landscape gardener. A large number of beautiful places about Philadelphia are the work of his hand. His sterling integrity was proverbial, and it will be pleasant to add, for the encouragement of those who are sometimes tempted, for a little gain, to swerve from the straight path, that he has for years been considered a comparatively wealthy man. He leaves a wife by a third marriage, and several children.

Donald McQueen.—Some thirty or forty years ago, when large numbers of wealthy and enthusiastic amateurs had fine gardens within a dozen miles of the heart of the city, and the Pennsylvania Horticultural Society was wealthy and prosperous enough to have grand monthly exhibitions equal in extent and beauty to many annual ones, the gardener to Robert Cornelius, gardener to Caleb Cope, and gardener to Joshua Longstreth, held their ground in severe competitions with numerous antagonists, and the three usually got away with the lion's share of the premiums. When we we read old volumes of the *Horticulturist* and other magazines of the period, the name of Donald McQueen, gardener to Joshua Longstreth, is of continual occurrence. Philadelphia now stands on 129 square miles of land, and the beautiful grounds of Joshua Longstreth, as well as so many more, are now mere city lots and built over. Mr. McQueen got into business in the suburbs, as a florist and landscape gardener, and meeting and receiving the respect and confidence of all who knew him, managed to get into a very good and successful business. His conscientious desire to do justice, led him to fret and worry when over-pressed with work, until his mind became evidently affected. An extra amount of good business was flowing towards him this season, and wondering how he would get through with it all creditably, completely overturned his brain, and he died by his own hand, on the 14th of February, in the 63d year of his age. It will be sad news to his many friends, numbers of whom are scattered over the Union.

Mahlon Moon.—This well known nurseryman of Morrisville, Bucks county, Pa., died on the 24th of January, in his 73rd year. He was a genuine lover of flowers, and out of this love grew the nursery business. He has been fortunate in leaving sons who have partaken of his love for these pursuits, and who are worthy representatives of that strict integrity which made dealings with the father so pleasant.

The Florida Times-Union.—An agricultural and literary magazine, published at Jacksonville, Florida. We are continually receiving new agricultural ventures, but, useful as they are in their own special fields, we rarely find in them anything of special interest to the intelligent class of horticulturists for which the Gardeners' Monthly has to cater. We were therefore agreeably surprised on reading, among the batch of monthlies on our table, No. 2, of this, to find it of a very high order of intelligence, and one which must have an excellent effect on fostering Florida interests. When we came to know that on its staff was Mr. A. H. Curtiss, so well known as a botanist and horticulturist, one good reason for its excellence was apparent. Among other good things we noted, was the foregoing method of grafting the grape, which we think we have not seen before, and deserves commendation for its simplicity. It was contributed by Dr. J. C. Neal.



Grafting on Small Roots.

A B—Scions prepared in two ways for ingrafting of roots.
C—Root trimmed for insertion.
D—Insertion of root (the lower Bud being below the surface of the ground).

Gardening for Profit.—By Peter Henderson. O. Judd Company, New York. Third Edition.

The first edition was issued in 1866, the second in 1874, and now a third, just twenty years after the first one. No better tribute to the value of the work than by the call for these successive appearances. Naturally every year brings new experiences, and teaches new lessons, and it is extremely fortunate that the author has been spared to revise an edition of which the first was so well received. The forcing of fruits under glass comes in for a share of attention now, which was denied the subject in former editions; and so many other topics have been included that while the first edition occupied only 243 pages, the present is paged to 375. It is a good proof that the more profit we would make, the more we must read and study to obtain it. A fair index, as well as a table of contents, is given, which was absent in the first volume and greatly enhances its value.

Nothing was said of fruits in the first edition, but it is now so well understood that fruits and vegetables, as a matter of profit, are in a measure inter-dependent, that it is not possible to leave out of "gardening for profit,', a glance at them both.

It is impossible to over-estimate the value of this work as a practical guide to the would-be market gardener, or indeed to many who already regard themselves as proficient in the business. The only improvement we would suggest, is, what we have already taken occasion to note in works of this character, that entirely too much space is occupied by a description and discussion of the merits of short-lived varieties. It reduces the character to that of a mere annual catalogue of a seedsman, and very much detracts from the value of a standard work. Many successful men will by no means agree that the varieties named are all the most profitable or the best adapted for general culture; while the author himself, will, in all probability, discard them himself long before a new edition is called for. In this volume we have a totally new list of potatoes from that given in the first edition, a wholly new list of tomatoes, only one of the original list of peas is left to us, and so on, of other classes of vegetables. The author himself seems in doubt about the propriety of continuing in this old-fashioned line of authorship, for in one case he notes that the list has been found useful "in the vicinity of New York." We would manure and cultivate this doubt, sure that it will result in adding to the value of an already indispensable work.

The Swiss Cross.—This is the title of a new monthly magazine for young people, who may desire more intelligent reading than the average of young people's magazines supply. It will be published in the interest of the Agazzis Association and edited by H. H. Ballard, and published at 47 Lafayette Place, New York. The following extract will show the useful character of the serial:

"*Gigantic Seaweeds.*—Every one knows that the sea has larger animals than can be found on land; but, with the enormous sequoias of California in mind, many may be surprised to learn of vegetable growths in the ocean vastly exceeding in length, though not in bulk, these giants of the forest. Recently the ship 'Clever,' commanded by Capt. John Stone, arrived at Montevideo with a portion of a seaweed which had been picked up in the Atlantic near the equator. The sailors perceived an object floating on the surface some distance from the ship, and, manning a boat, they rowed to it, and ascertained that it was an alga of enormous size. On measuring it, it was found to have a length upward of fifteen hundred feet."

The Book of Plans.—By Geo. A. Solly & Son, of Springfield, Mass. This Book of Plans is something which will be welcomed by all lovers of flowers, and particularly by those who yearly are perplexed over suitable shapes and designs for the flower-beds. The work consists of over 100 well-executed and accurate plans for carpet bedding and other flower-beds, drawn on a large scale. It is accompanied by a key which enables one at a glance to see what varieties are required to make their beds artistic and attractive. We gave a favorable notice of it last year, and are glad to know that it met with such success that a second edition has been called for. It is just what the people wanted.

A LIST OF NORTH AMERICAN PLANTS.—H. M. Patterson, of Oquawka, Ills., has published in book form a list of all the plants known to North America, which will be of great value to botanists and others.

BOOK OF PLANT DESCRIPTIONS, OR RECORD OF PLANT ANALYSIS.—By Geo. A. Groff, Professor of Botany, Lewisburg University, Pa. The book, besides a glossary, is made up of blank forms, to aid young botanists in analyzing plants. Its usefulness and popularity is exemplified by the fact that this is the sixth edition of the work.

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THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXIX. APRIL, 1887. NUMBER 340.

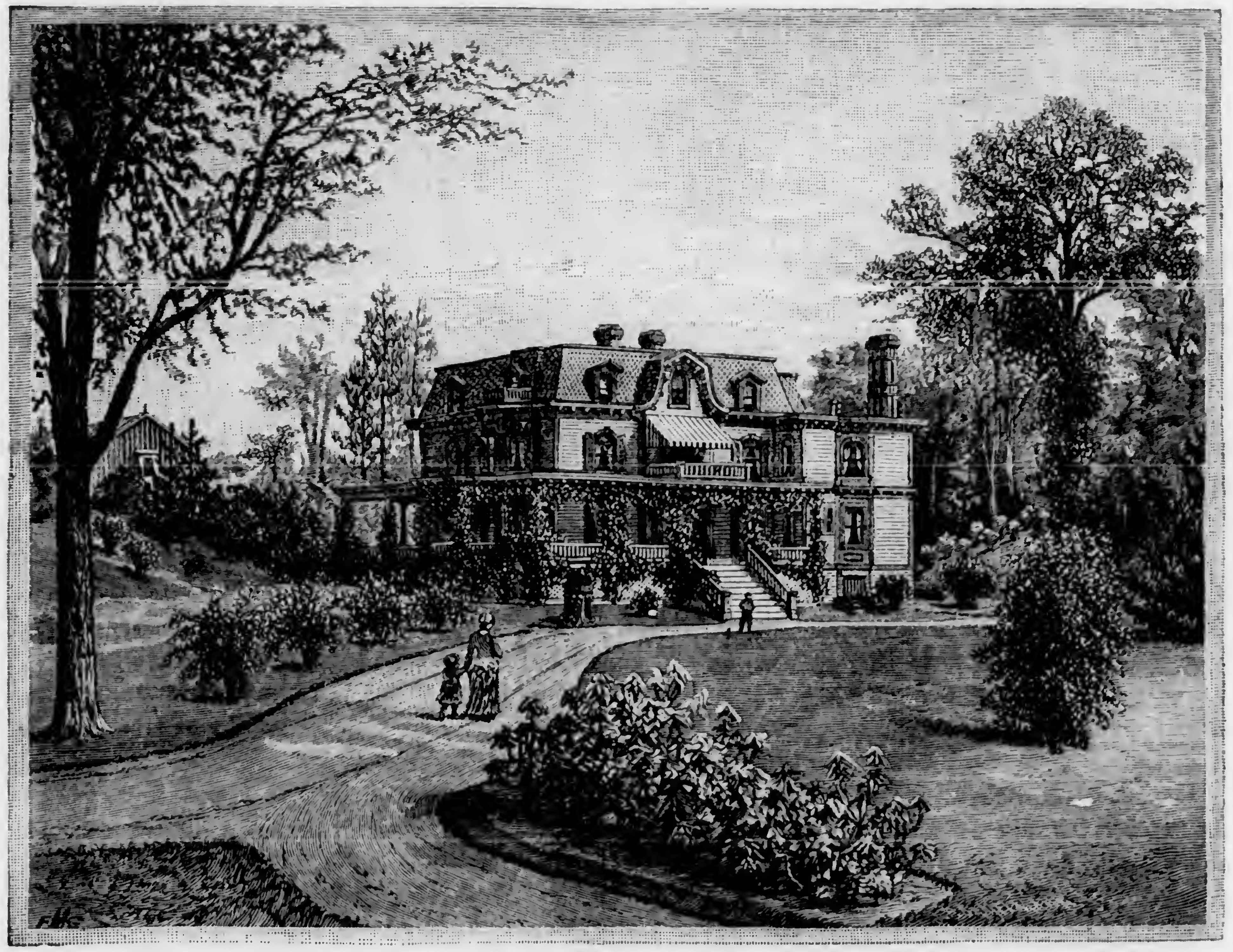
FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

The great difference between an artist in landscape gardening, and a mere loon, would probably be in the ability of the one to give an intelligent reason for what he does, while the other could do little more than say, "I did that because I did." Yet an artist's reason is not always the sole reason for the work of the landscape gardener. The artist, who is simply an artist, seldom considers much besides the lines of beauty, but the landscape gardener has to study convenience as well. Utility can never be forgotten by the landscape gardener, and the beauty he strives for is seldom appreciated, unless some useful object underlies the whole. A winding carriage road, with its graceful lines leading to the building, is a pretty object in a picture; but the landscape gardener must remember that it is made for the purpose of getting to a building, and that it must be hard, solid, smooth, easy to travel over, and must not curve for the mere sake of curving. He has, therefore, often to sacrifice some abstract principles of beauty to gain the ulterior object, or he has to make reasons to give color to the beauty he desires. We give a very good illustration of this principle in a view on next page, of the grounds of Springhurst, the residence of Frederick Goodridge, Esq., at Riverdale on the Hudson. The carriage road leading to the house, from the west of the picture, makes a nice, graceful curve, and easy grade to the front door; but an excellent reason for the curve at one point is the apparent necessity for circling around the elm tree. Even one who could give no reason for special lines, would see that the absence of the elm would detract from the beauty of the whole. Again, from the east of the picture, another road has to connect with the other. The bed of rhododendrons furnishes an excellent reason for the junction at that point. With that bed, the junction is a pretty feature. The driver of a vehicle would never think there was any thing improper in turning just there. Imagine now the bed absent, and the impulse both for driver and foot passengers would be to rebel at the orders of the landscape gardener. The "short cut" would be made in spite of him. The designer would be compelled to revise his lines. The curve to the east would have to start a little beyond the lady and child, cutting off one-third of the rhododendron bed on its westerly edge, and coming into the easterly road very near to the south-east end of where the rhododendrons are growing.

Even good landscape gardeners can not always give a reason for what is done, but the lesson taught is, that such reasons should always be in mind, and should influence designing as far as practicable.

Speaking of rhododendrons, it is pleasant to note the increasing taste for this lovely evergreen shrub. The great enemy to success is sun in winter, and cold, cutting, wintry winds. Trees often make good protectors against these enemies; where these are not at hand, artificial shade with branches of trees, corn-stalks, or some similar material, is useful. The trouble with trees is, that the roots make the ground dry, and rhododendrons hate dry ground. On the other hand they do not like ground on which water lies. Soil for rhododendrons should hold moisture, but yet suffer water itself to pass rapidly away. The immense amount of fibrous, hair-like roots, give a ball of earth to the plant, which enables us to transplant them easily, at any season of the year. The beautiful rhododendrons of our gardens are mostly hybrids between the Rhododendron Catawbiense, of the mountains of North Carolina, and the Rhododendron ponticum, of Asia Minor. The latter species is somewhat tender in most parts of our country, hence those hybrids that partake largely of the nature of the ponticum, are not popular with American planters, though thriving well in the moister atmosphere of the old world. The hybrids that have more of the nature of the Catawba species in them, are perfectly hardy, and these should be selected. The varieties are propagated by layers or by grafting. When grafted, the wild R. Catawbiense is used for a stock. The old Mountain laurel is the Rhododendron maximum, although the wood laurel, Kalmia latifolia, sometimes gets called Mountain laurel also. This rhododendron flowers later than the R. Catawbiense and its hybrids, and has not, so far as we know, been used for hybridizing with the southern form. It is, however, an excellent one to have in a collection, from its superior hardiness, and greater size. It usually reaches double the height of the other one.



Springhurst: Residence of Frederick Goodridge, Riverdale, N. Y.

COMMUNICATIONS.

ROSES.

BY D. M. DUNNING.

II.

If the writer were asked to what particular feature of culture more than any other he felt that his success with roses was due, he would reply, to the use of liquid manure. This is applied from the middle of May—just as the foliage gets well started—to the middle of June—when the roses are commencing to open, and the resultant growth is both surprising and gratifying.

When the sap from this kind of food begins to course through the roses, all insect life becomes despondent, and the liberal quantities of it, soaking down through the ground, mean death to the larva of the rose-bug, and all the other miserable depredators who happen to be lurking there. Stir up a half bushel of cow manure in a barrel of water, and let it stand a day or two. Use quite weak at first, and gradually a little stronger, once, twice, or three times a week.

The evening is the best time to apply it, and give after it a good, thorough watering, washing well the foliage. This will neutralize the effect of the manure if too strong, and thoroughly clean the foliage of all insects.

I always have a supply of nice black leaf mould, which I spread over my rose beds very thin, every time they are made up in the flowering season, which is about once a week.

It adds greatly to their appearance, and I think helps to retain the moisture in the ground.

As I cannot always be explaining about it, I am afraid that sometimes people think the roses are growing altogether in that kind of soil, and thereby account for their thrifty appearance; but this would be a great mistake, for I know to my sorrow that hardy roses will not flourish in a soil of leaf mould.

A pleasant diversion in the way of rose growing is to select a straight shoot of some strong growing kind, like Charles Lefebvre or Jean Liabaud, which often throw shoots eight or ten feet in length, and turn it into a rose tree by cutting it off at about five or six feet from the ground, and rubbing off all the lower buds as soon as they appear in the spring, allowing, perhaps, a dozen of the upper ones to grow, to form the head of the tree. All growth below this head is rigidly rubbed off through the season, and if not too many buds are allowed to bloom at one time, a Charles Lefebvre treated in this way can be made to show a continuous bloom throughout the summer, and becomes a very attractive object in the rose garden. The laterals should be pruned to one or two buds each, when the tree is laid down in the fall, and after the second year the head must be thinned out somewhat, to keep it from becoming too dense. On a head of Charles Lefebvre treated in this manner, I counted, last June, the second year of its tree form, over three hundred buds, about two-thirds of which were at once removed. A tree of this kind should be protected from the sun, and supported by a strong stake driven on the south side of it, and reaching quite up to the head.

A very interesting feature of rose growing to the amateur is, the names and descriptions of the different varieties. There are some twenty or thirty varieties of such remarkable beauty, and excellent qualities, that I cannot resist giving a brief description of them just as I have found them in a practical way. It was a description of the varieties that attracted my attention more than anything else in Mr. Ellwanger's paper.

Previous to this I did not know that there were any hardy roses that were good for anything. I had tried some of the old varieties like Giant of Battles and Caroline de Sansal, without any satisfaction, and I was delighted to find that there was such a list of hardy roses so well recommended to work from. Some of the names rang in my head until I had bought them, and planted them, and watched them into bloom, and they never disappointed me.

In preparing a list of our finest roses now, I should place among the first, a rose which Mr. Ellwanger succeeded in raising, after he prepared his list, which is Marshall P. Wilder. This rose probably has more points of excellence than any other rose we have.

It is of a clear crimson color, beautiful in the bud, which is very rare among hardy roses, and beautiful in all the stages of its bloom; hardy, and of good growth, very fragrant, and is the most continuous bloomer of any of this class of roses. It certainly is a great pleasure to have this beautiful rose left with us as a souvenir of the one who raised it, who did so much more than anyone else to advance the interests of rose growing among us, and also in remembrance of the one whose name it bears.

Louis Van Houtte is undoubtedly the very best dark rose we have, combining all the good qualities above mentioned, except that it is somewhat tender, and requires good winter protection. Its rich, dark, velvety petals make it a great favorite though now a long time out of the editorial harness.

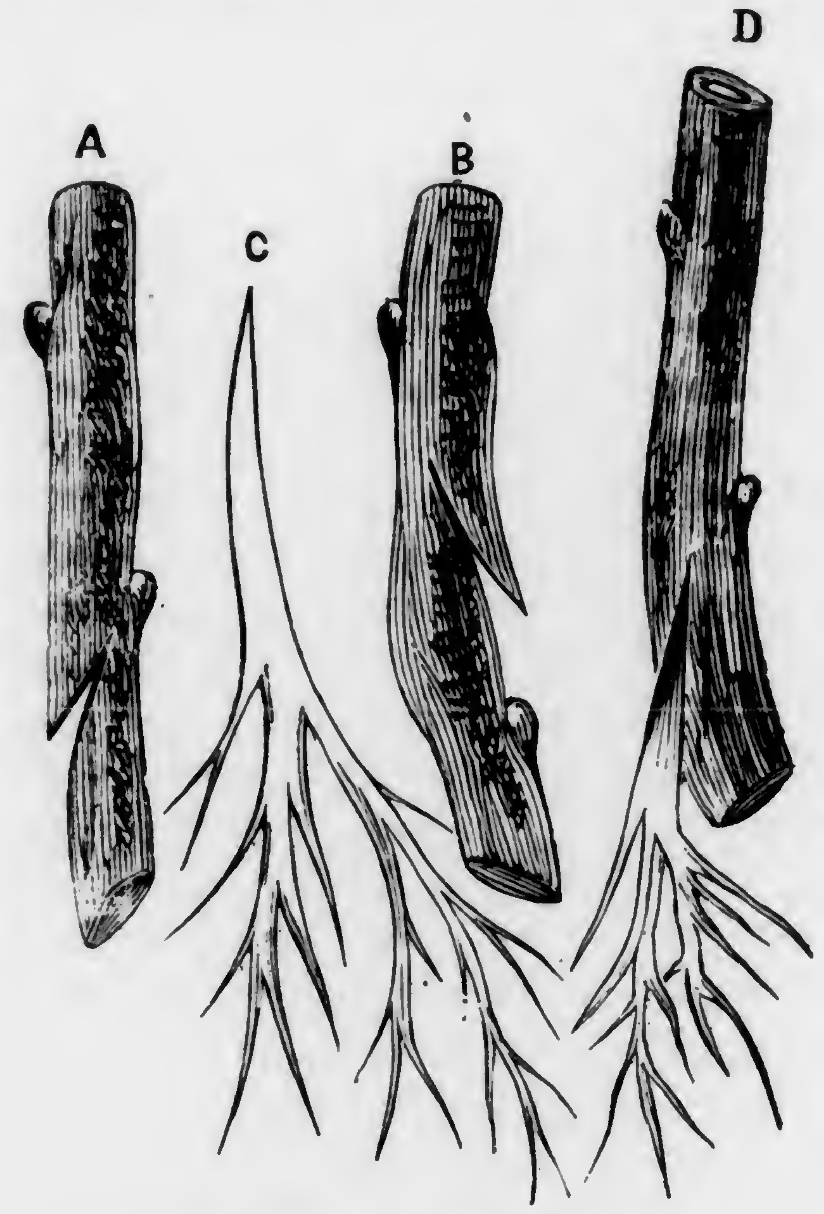
A WEALTHY GARDENER.—Mr. Patrick Devine, who died on November 1st, 1885, was gardener to members of the Fisher family in Germantown, for near half a century, continuing his faithful work up to the time of his death. His estate is valued at $44,000, which he left to his wife.

DR. WIGAND.—Some of our flower lovers are familiar with a very pretty genus of plants named Wigandia, and they will be sorry to learn of the death of the gentleman whose name it bears. He was professor of Botany at Marburg, Hesse, and died on the 22d of October, in his 65th year, according to a note in the *Botanical Gazette*.

DAVID POOLEY.—First-class landscape gardeners are not numerous, and among them Mr. Pooley's place will be missed by a large number of friends. He died on January 11th, in his 65th year. He came from England many years ago, and was gardener to Harry Ingersoll, Esq., at his beautiful seat near Philadelphia, after which he established himself as a landscape gardener. A large number of beautiful places about Philadelphia are the work of his hand. His sterling integrity was proverbial, and it will be pleasant to add, for the encouragement of those who are sometimes tempted, for a little gain, to swerve from the straight path, that he has for years been considered a comparatively wealthy man. He leaves a wife by a third marriage, and several children.

DONALD MCQUEEN.—Some thirty or forty years ago, when large numbers of wealthy and enthusiastic amateurs had fine gardens within a dozen miles of the heart of the city, and the Pennsylvania Horticultural Society was wealthy and prosperous enough to have grand monthly exhibitions equal in extent and beauty to many annual ones, the gardener to Robert Cornelius, gardener to Caleb Cope, and gardener to Joshua Longstreth, held their ground in severe competitions with numerous antagonists, and the three usually got away with the lion's share of the premiums. When we we read old volumes of the *Horticulturist* and other magazines of the period, the name of Donald McQueen, gardener to Joshua Longstreth, is of continual occurrence. Philadelphia now stands on 129 square miles of land, and the beautiful grounds of Joshua Longstreth, as well as so many more, are now mere city lots and built over. Mr. McQueen got into business in the suburbs, as a florist and landscape gardener, and meeting and receiving the respect and confidence of all who knew him, managed to get into a very good and successful business. His conscientious desire to do justice, led him to fret and worry when over-pressed with work, until his mind became evidently affected. An extra amount of good business was flowing towards him this season, and wondering how he would get through with it all creditably, completely overturned his brain, and he died by his own hand, on the 14th of February, in the 63d year of his age. It will be sad news to his many friends, numbers of whom are scattered over the Union.

MAHLON MOON.—This well known nurseryman of Morrisville, Bucks county, Pa., died on the 24th of January, in his 73rd year. He was a genuine lover of flowers, and out of this love grew the nursery business. He has been fortunate in leaving sons who have partaken of his love for these pursuits, and who are worthy representatives of that strict integrity which made dealings with the father so pleasant.



Grafting on Small Roots.

A B—Scions prepared in two ways for ingrafting of roots.
C—Root trimmed for insertion.
D—Insertion of root (the lower Bud being below the surface of the ground).

THE FLORIDA TIMES-UNION.—An agricultural and literary magazine, published at Jacksonville, Florida. We are continually receiving new agricultural ventures, but, useful as they are in their own special fields, we rarely find in them anything of special interest to the intelligent class of horticulturists for which the GARDENERS' MONTHLY has to cater. We were therefore agreeably surprised on reading, among the batch of monthlies on our table, No. 2, of this, to find it of a very high order of intelligence, and one which must have an excellent effect on fostering Florida interests. When we came to know that on its staff was Mr. A. H. Curtiss, so well known as a botanist and horticulturist, one good reason for its excellence was apparent. Among other good things we noted, was the foregoing method of grafting the grape, which we think we have not seen before, and deserves commendation for its simplicity. It was contributed by Dr. J. C. Neal.

GARDENING FOR PROFIT.—By Peter Henderson. O. Judd Company, New York. Third Edition.

The first edition was issued in 1866, the second in 1874, and now a third, just twenty years after the first one. No better tribute to the value of the work than by the call for these successive appearances. Naturally every year brings new experiences, and teaches new lessons, and it is extremely fortunate that the author has been spared to revise an edition of which the first was so well received. The forcing of fruits under glass comes in for a share of attention now, which was denied the subject in former editions; and so many other topics have been included that while the first edition occupied only 243 pages, the present is paged to 375. It is a good proof that the more profit we would make, the more we must read and study to obtain it. A fair index, as well as a table of contents, is given, which was absent in the first volume and greatly enhances its value.

Nothing was said of fruits in the first edition, but it is now so well understood that fruits and vegetables, as a matter of profit, are in a measure inter-dependent, that it is not possible to leave out of "gardening for profit,', a glance at them both.

It is impossible to over-estimate the value of this work as a practical guide to the would-be market gardener, or indeed to many who already regard themselves as proficient in the business. The only improvement we would suggest, is, what we have already taken occasion to note in works of this character, that entirely too much space is occupied by a description and discussion of the merits of short-lived varieties. It reduces the character to that of a mere annual catalogue of a seedsman, and very much detracts from the value of a standard work. Many successful men will by no means agree that the varieties named are all the most profitable or the best adapted for general culture; while the author himself, will, in all probability, discard them himself long before a new edition is called for. In this volume we have a totally new list of potatoes from that given in the first edition, a wholly new list of tomatoes, only one of the original list of peas is left to us, and so on, of other classes of vegetables. The author himself seems in doubt about the propriety of continuing in this old-fashioned line of authorship, for in one case he notes that the list has been found useful "in the vicinity of New York." We would manure and cultivate this doubt, sure that it will result in adding to the value of an already indispensable work.

THE SWISS CROSS.—This is the title of a new monthly magazine for young people, who may desire more intelligent reading than the average of young people's magazines supply. It will be published in the interest of the Agazzis Association and edited by H. H. Ballard, and published at 47 Lafayette Place, New York. The following extract will show the useful character of the serial:

"*Gigantic Seaweeds.*—Every one knows that the sea has larger animals than can be found on land; but, with the enormous sequoias of California in mind, many may be surprised to learn of vegetable growths in the ocean vastly exceeding in length, though not in bulk, these giants of the forest. Recently the ship 'Clever,' commanded by Capt. John Stone, arrived at Montevideo with a portion of a seaweed which had been picked up in the Atlantic near the equator. The sailors perceived an object floating on the surface some distance from the ship, and, manning a boat, they rowed to it, and ascertained that it was an alga of enormous size. On measuring it, it was found to have a length upward of fifteen hundred feet."

THE BOOK OF PLANS.—By Geo. A. Solly & Son, of Springfield, Mass. This Book of Plans is something which will be welcomed by all lovers of flowers, and particularly by those who yearly are perplexed over suitable shapes and designs for the flower-beds. The work consists of over 100 well-executed and accurate plans for carpet bedding and other flower-beds, drawn on a large scale. It is accompanied by a key which enables one at a glance to see what varieties are required to make their beds artistic and attractive. We gave a favorable notice of it last year, and are glad to know that it met with such success that a second edition has been called for. It is just what the people wanted.

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The great difference between an artist in landscape gardening, and a mere loon, would probably be in the ability of the one to give an intelligent reason for what he does, while the other could do little more than say, "I did that because I did." Yet an artist's reason is not always the sole reason for the work of the landscape gardener. The artist, who is simply an artist, seldom considers much besides the lines of beauty, but the landscape gardener has to study convenience as well. Utility can never be forgotten by the landscape gardener, and the beauty he strives for is seldom appreciated, unless some useful object underlies the whole. A winding carriage road, with its graceful lines leading to the building, is a pretty object in a picture; but the landscape gardener must remember that it is made for the purpose of getting to a building, and that it must be hard, solid, smooth, easy to travel over, and must not curve for the mere sake of curving. He has, therefore, often to sacrifice some abstract principles of beauty to gain the ulterior object, or he has to make reasons to give color to the beauty he desires. We give a very good illustration of this principle in a view on next page, of the grounds of Springhurst, the residence of Frederick Goodridge, Esq., at Riverdale on the Hudson. The carriage road leading to the house, from the west of the picture, makes a nice, graceful curve, and easy grade to the front door; but an excellent reason for the curve at one point is the apparent necessity for circling around the elm tree. Even one who could give no reason for special lines, would see that the absence of the elm would detract from the beauty of the whole. Again, from the east of the picture, another road has to connect with the other. The bed of rhododendrons furnishes an excellent reason for the junction at that point. With that bed, the junction is a pretty feature. The driver of a vehicle would never think there was any thing improper in turning just there. Imagine now the bed absent, and the impulse both for driver and foot passengers would be to rebel at the orders of the landscape gardener. The "short cut" would be made in spite of him. The designer would be compelled to revise his lines. The curve to the east would have to start a little beyond the lady and child, cutting off one-third of the rhododendron bed on its westerly edge, and coming into the easterly road very near to the south-east end of where the rhododendrons are growing.

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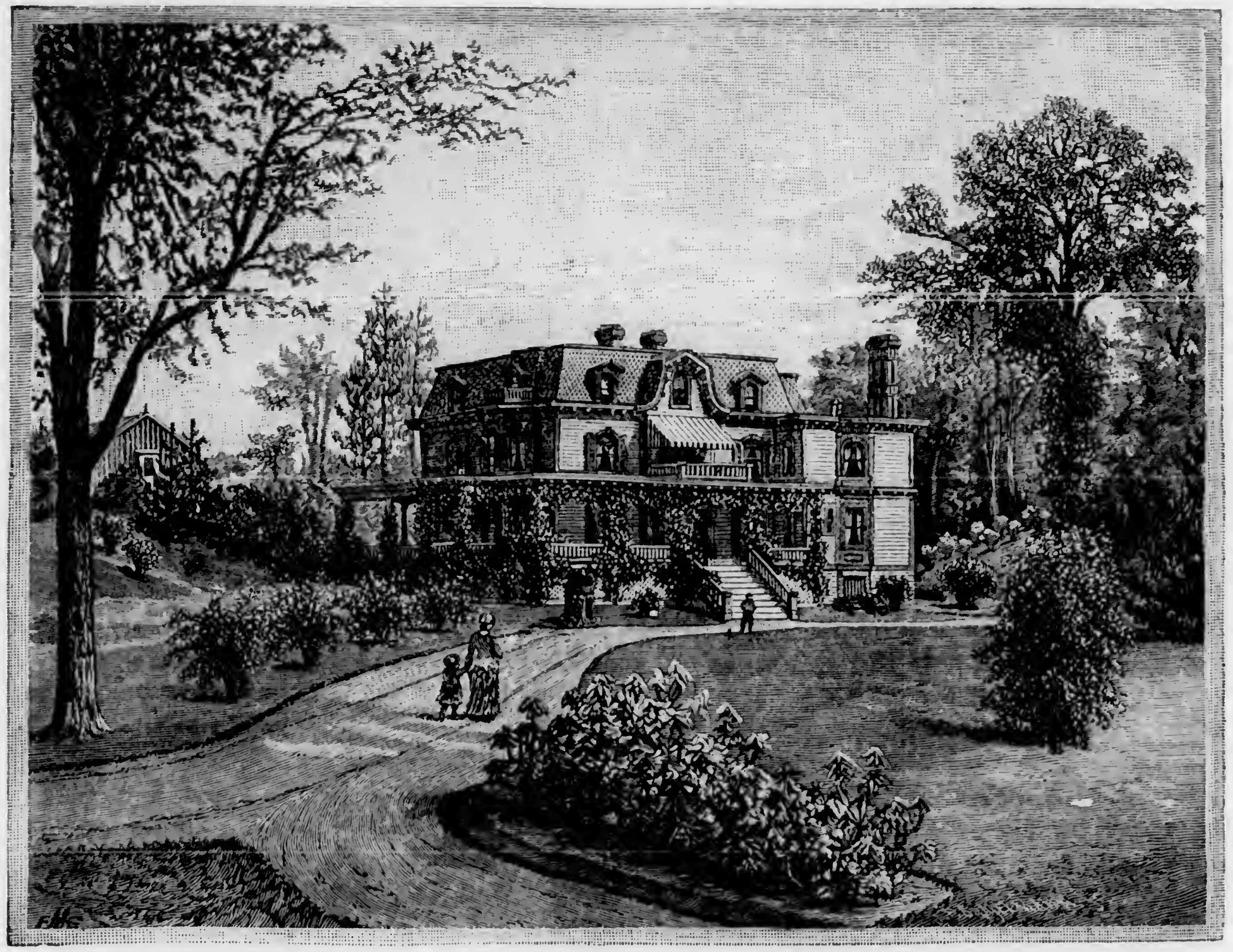
Speaking of rhododendrons, it is pleasant to note the increasing taste for this lovely evergreen shrub. The great enemy to success is sun in winter, and cold, cutting, wintry winds. Trees often make good protectors against these enemies; where these are not at hand, artificial shade with branches of trees, corn-stalks, or some similar material, is useful. The trouble with trees is, that the roots make the ground dry, and rhododendrons hate dry ground. On the other hand they do not like ground on which water lies. Soil for rhododendrons should hold moisture, but yet suffer water itself to pass rapidly away. The immense amount of fibrous, hair-like roots, give a ball of earth to the plant, which enables us to transplant them easily, at any season of the year. The beautiful rhododendrons of our gardens are mostly hybrids between the Rhododendron Catawbiense, of the mountains of North Carolina, and the Rhododendron ponticum, of Asia Minor. The latter species is somewhat tender in most parts of our country, hence those hybrids that partake largely of the nature of the ponticum, are not popular with American planters, though thriving well in the moister atmosphere of the old world. The hybrids that have more of the nature of the Catawba species in them, are perfectly hardy, and these should be selected. The varieties are propagated by layers or by grafting. When grafted, the wild R. Catawbiense is used for a stock. The old Mountain laurel is the Rhododendron maximum, although the wood laurel, Kalmia latifolia, sometimes gets called Mountain laurel also. This rhododendron flowers later than the R. Catawbiense and its hybrids, and has not, so far as we know, been used for hybridizing with the southern form. It is, however, an excellent one to have in a collection, from its superior hardiness, and greater size. It usually reaches double the height of the other one.



Springhurst: Residence of Frederick Goodridge, Riverdale, N. Y.

COMMUNICATIONS.

ROSES.

BY D. M. DUNNING.

II.

If the writer were asked to what particular feature of culture more than any other he felt that his success with roses was due, he would reply, to the use of liquid manure. This is applied from the middle of May—just as the foliage gets well started —to the middle of June—when the roses are commencing to open, and the resultant growth is both surprising and gratifying.

When the sap from this kind of food begins to course through the roses, all insect life becomes despondent, and the liberal quantities of it, soaking down through the ground, mean death to the larva of the rose-bug, and all the other miserable depredators who happen to be lurking there. Stir up a half bushel of cow manure in a barrel of water, and let it stand a day or two. Use quite weak at first, and gradually a little stronger, once, twice, or three times a week.

The evening is the best time to apply it, and give after it a good, thorough watering, washing well the foliage. This will neutralize the effect of the manure if too strong, and thoroughly clean the foliage of all insects.

I always have a supply of nice black leaf mould, which I spread over my rose beds very thin, every time they are made up in the flowering season, which is about once a week.

It adds greatly to their appearance, and I think helps to retain the moisture in the ground.

As I cannot always be explaining about it, I am afraid that sometimes people think the roses are growing altogether in that kind of soil, and thereby account for their thrifty appearance; but this would be a great mistake, for I know to my sorrow that hardy roses will not flourish in a soil of leaf mould.

A pleasant diversion in the way of rose growing is to select a straight shoot of some strong growing kind, like Charles Lefebvre or Jean Liabaud, which often throw shoots eight or ten feet in length, and turn it into a rose tree by cutting it off at about five or six feet from the ground, and rubbing off all the lower buds as soon as they appear in the spring, allowing, perhaps, a dozen of the upper ones to grow, to form the head of the tree. All growth below this head is rigidly rubbed off through the season, and if not too many buds are allowed to bloom at one time, a Charles Lefebvre treated in this way can be made to show a continuous bloom throughout the summer, and becomes a very attractive object in the rose garden. The laterals should be pruned to one or two buds each, when the tree is laid down in the fall, and after the second year the head must be thinned out somewhat, to keep it from becoming too dense. On a head of Charles Lefebvre treated in this manner, I counted, last June, the second year of its tree form, over three hundred buds, about two-thirds of which were at once removed. A tree of this kind should be protected from the sun, and supported by a strong stake driven on the south side of it, and reaching quite up to the head.

A very interesting feature of rose growing to the amateur is, the names and descriptions of the different varieties. There are some twenty or thirty varieties of such remarkable beauty, and excellent qualities, that I cannot resist giving a brief description of them just as I have found them in a practical way. It was a description of the varieties that attracted my attention more than anything else in Mr. Ellwanger's paper.

Previous to this I did not know that there were any hardy roses that were good for anything. I had tried some of the old varieties like Giant of Battles and Caroline de Sansal, without any satisfaction, and I was delighted to find that there was such a list of hardy roses so well recommended to work from. Some of the names rang in my head until I had bought them, and planted them, and watched them into bloom, and they never disappointed me.

In preparing a list of our finest roses now, I should place among the first, a rose which Mr. Ellwanger succeeded in raising, after he prepared his list, which is Marshall P. Wilder. This rose probably has more points of excellence than any other rose we have.

It is of a clear crimson color, beautiful in the bud, which is very rare among hardy roses, and beautiful in all the stages of its bloom; hardy, and of good growth, very fragrant, and is the most continuous bloomer of any of this class of roses. It certainly is a great pleasure to have this beautiful rose left with us as a souvenir of the one who raised it, who did so much more than anyone else to advance the interests of rose growing among us, and also in remembrance of the one whose name it bears.

Louis Van Houtte is undoubtedly the very best dark rose we have, combining all the good qualities above mentioned, except that it is somewhat tender, and requires good winter protection. Its rich, dark, velvety petals make it a great favorite

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INTENTIONAL SECOND EXPOSURE

everywhere. Other beautiful dark roses are Prince Camille de Rohan, Baron de Bonstetten, and Jean Liabaud, any of which will at times rival the former in beauty, and they are more rugged in constitution and stronger growers, but they are not such free and continuous bloomers as Louis Van Houtte, which alone among the dark roses can make claim to good remontant qualities.

Eugenie Verdier ranks first with me among the light roses. It is somewhat tender, and has but little fragrance, which little shows the tea blood in its parentage, but has the most magnificent buds, and lingers several days in the half open stage, rivalling in beauty in this state, any other rose that we have. The color is a bright silvery pink, shaded with a delicate tint of salmon. I predict a small fortune for the florist who is successful in forcing this rose for the New York market.

Other light roses are, Gabriel Luizet, which combines great beauty with hardiness and fragrance, but rarely blooms late in the season; Baroness Rothschild, which probably has more admirers than any other rose, on account of its large size and perfection of form, each rose being a bouquet of itself as it nestles down in its beautiful foliage.

There is no rose that shows a wider margin of beauty, between good culture and poor culture, than the pure white Mabel Morrison. It is simply a white Baroness Rothschild, somewhat more delicate in size and fullness of flower, and has been so far with me the only good white rose that I have had, excepting the two old garden roses, Madame Plantier and Madame Hardy, which everyone should have. The white hybrid Noisettes I do not regard as worth cultivating, on account of the poor quality of the flowers, but in thus describing them I do not include the beautiful Eliza Boelle, so delicately shaded with pink; and the hybrid Noisette, Madam Auguste Perrin, will give more blooms than any other rose throughout the entire season; they are always perfect in form, of a clear pink color, and full of the old-fashioned fragrance.

I have a feeling, from what I have seen of the new white Merville de Lyon, during the past season, that it is going to be a great help to us in the way of a supply of beautiful white roses.

The rose Ettienne Levet has asserted itself for the past two years in my garden as almost unequalled for beauty of form and color, and I wish it were more generally cultivated.

Glory of Cheshunt is a new rose which I think is bound to come to the front, and Annie Wood is an old rose, which should have come to the front years ago, each of them having sterling good qualities.

It is seldom that we have such a beautiful rose, and at the same time so hardy, and of such easy management as Anne de Diesbach.

We never half appreciated this rose until it was sent out under a false name (Gloire de Paris) and sold all over the country at fabulous prices. Quite similar to it in habit, and the peer of any rose in many respects, is Francois Michelon, with its noble pendant blooms of globular form.

Two very desirable crimson roses are, Marie Bauman and Alfred Colomb, quite similar, the former excelling in freedom of bloom, and the latter for beauty.

Other good crimson roses are, Charles Lefebvre, of strong growth, Charles Margottin, which does not fade in our hot sunshine, and Gen. Jacqueminot, a strong grower and continuous bloomer.

Two quite unique roses are, Marquise de Castellane, and Edward Morren, the former of great beauty on its stubby, thorny wood, and the latter with a very peculiar shading of color, which looks as though it might have some material stored away for a future yellow, among our hardy roses, which would be a most acceptable addition to the family.

Such good honest roses as Marguerite de St. Amande, John Hopper, Abel Grand, Jules Margottin, and Louise Odier, the latter a perfectly hardy Bourbon rose, look very plain when compared with some of the more striking beauties before named, but they are always with us, and I trust will always remain.

There are two of the hybrid Teas, which I have grown for years among my hardy roses, with great satisfaction, viz.: La France and Captain Christy. They are the only two of this large family that seem rugged enough to flourish in our climate. I find it an easy matter to carry them through the winter safely, but the difficulty is to get sufficient heat through the flowering season to bring the flowers to perfection. La France gives the better satisfaction, blooming continuously throughout the season, many of the blooms being of remarkable beauty and unequalled for fragrance.

Captain Christy must have the best of care, and be severely disbudded, to bring any flowers to perfection, but one seldom sees a more beautiful rose than a perfect Captain Christy.

[Read before the Horticultural Society of Western New York.]

SHEPHERDIA CANADENSIS.

BY DIGRAM.

By the side of a road leading from near the top of the elevator of the Genesee Falls Hotel down to the river's edge, I saw for the first time, a year ago, the shrubby, deciduous-leaved Shepherdia Canadensis.

Growing to a height of six feet, this vegetable—to use a word frequently employed by Michaux—has rusty scaled branches, and leaves with a similar under-surfacing, the latter being green above and in shape elliptical or ovate.

The Shepherdia is a native. Its natural hedge height and foliage, somewhat privet-like in outline, might suggest its use for enclosing an ornamental piece of ground. Trimming would be unnecessary, unless lowness or a greater density were desirable. On a lawn devoted to plants with blotched and unusually colored leaves, or as a central object in a circular or oval bed of sedums or rich flowered herbs, it would play an effective part.

Some of our indigeni—to coin a word—are so backward that they require to be introduced over and over again before they feel well at ease amongst conspicuous strangers. This dweller on the borders has evidently not yet had its first call to come out and make the acquaintance of the public. *Rochester, July 6, 1886.*

[The Shepherdias have been in some request in gardens, chiefly for the beautiful berries they bear. Unfortunately, the male and female flowers are on separate plants,—diœcious—so people seldom get berry-bearing plants. But, as our correspondent well notes, they deserve cultivation for the pretty foliage alone.—Ed. G. M.]

CULTURE OF SWEET PEAS.

BY M. B. FAXON.

In regard to sweet peas, the essayist thought all present would agree with him that the sweet pea is the most desirable annual in cultivation. Its delicate fragrance, beautiful form and variety of coloring make it a favorite with the florist, while its easy culture and long continuance of blooming secure its cultivation in every flower garden.

Sweet peas must be planted as early in the spring as the ground can be worked. The seed should be sown in drills and covered at least 6 inches deep. This may be done in two ways. Having prepared the ground and made the drills the desired depth, drop the seed and draw into the drill earth enough to cover the seed 2 inches deep. As soon as the plants appear through this covering draw in 2 inches more of earth, and so on until the drill is filled even with the surface of the ground, or the seed may be dropped and covered in the usual manner.

The surface of the ground sometimes becomes hard just as the young plants are about to appear, especially after a shower followed by a hot sun and unless some means are taken to prevent this, many of the young plants will not break through the soil, and no more will be seen of them than if the seed had not germinated at all; and annoying gaps will appear in the rows. A slight raking just as the plants are breaking ground will prevent this, and also kill any small weeds that may have started.

The only laborious task in the cultivation of sweet peas is bushing them, and bushed they must be almost as soon as they are well up. The essayist uses birch brush, the same as for tall-growing eatable varieties. Wire hen-netting makes an excellent support and is very neat. Whatever they are trained on must be firmly secured in position, as the vines when fully grown will surely be blown down unless strongly supported. Whatever supports are used, it will be found an excellent plan to place them in position before the peas are planted; then sow a row of seed on each side of the support, which, when the vines are grown will be entirely hidden from view, and a beautiful wall of flowers will be the result.

[Read before the Massachusetts Horticultural Society.]

EDITORIAL NOTES.

Tall Grass.—A correspondent of the *Country Gentleman* notes that as this grass (Panicum sanguinale) is an annual, it may be destroyed by not mowing the lawn after this grass starts to grow, till it has grown up tall and is about to flower. By thus mowing it before it seeds, we may get rid of it.

Perennial Phloxes.—These are propagated by cuttings of the flower stems if they are taken off before the flower buds are formed. Indeed all herbaceous plants, including the Hollyhock, can be raised this way.

Culture of Herbaceous Plants.—During a discussion on herbaceous plants before the Massachusetts Horticultural Society, every speaker laid stress on the importance of giving these plants plenty of rich food. Failure to succeed often came from poverty of the soil.

JAPAN LILIES.—Do not forget that these and all other Lilies like a rich and cool soil. Some of the most successful we ever saw were planted in among a lot of Rhododendrons, where they were kept very cool.

GAILLARDIAS. — For flowering in American gardens through the summer the Gaillardia is an excellent plant. It does not mind heat or drought, and flowers till frost. Though annuals, they propagate from cuttings much as Petunias do.

VIOLETS. — There are few more acceptable flowers than the Violet. To have them to perfection they are best set in the open ground for summer, and then lifted for potting or putting in boxes or benches in the fall. They like rich soil to grow for the summer, must on no account be allowed to get dry, and if in a partially shady place, all the better.

THE SNAP-DRAGON.—The old-fashioned Snap-Dragon is a fine out-door summer flower, but when sown in spring they do not flower till late. They are best raised from cuttings and kept over, turning them out in spring. There are many beautiful varieties now listed in florists' catalogues.

POLYANTHUS. — The old-fashioned Primroses known as Polyanthuses, from the many flowers on one stalk, while the Primrose of the poets has but a single flower, have nearly disappeared from gardens, and more's the pity. The gardens of our grandmothers, which had all these pretty things in them, will soon be at a premium, and a handsome one too. Plenty of manure, and not too hot or dry a place in summer is all the care these lovely things desire.

CULTURE OF SWEET PEAS.—At the February meeting of the Massachusetts Horticultural Society, Joseph H. Woodford said that for sweet peas he digs a trench two spades deep and fills in with manure and mixes it with the soil, so as to be 2 or 3 inches below the surface. On this he sows the seed, covering it an inch, and when the plants are up drawing more soil on, so that the ground is level when he sticks them. He puts in heavy sticks, as he must, to support them. The flowers must be picked every day, or you will not have any late ones. The object of all annual plants is to grow, bloom and perfect their seed, and when they are allowed to do the last, they die and you get no more flowers. The first flowers of the aster are from the centre of the shoots and are very fine, and if you pick these you will get flowers from the side shoots. Pansies are fond of moisture and cool soil, and will bear the highest manuring if the manure is somewhat decomposed. He manures them highly in a trench with the coolest manure he can get. If very dry he would water with pretty strong liquid manure—not immediately around the plants, but would make holes between them and pour the manure in. He picks them because he wants them, but never lets them mature seed.

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SCRAPS AND QUERIES.

WHITE VARIETY OF AMERICAN WISTARIA.—Mr. Geo. G. Atwood, Geneva, N. Y., writes: "The article, p. 38, Feb. No. of the MONTHLY, reminds me that we had a Wistaria frutescens alba in bloom here last season. The cluster was about the size of a bunch of grapes, compact, creamy white, and profuse in bloom. The best thing about this variety is, that it is a stronger grower than the Chinese white, and is hardy here. The leaves of Chinese white curl up, which checks its growth, making it a slow climber, while the W. frutescens alba is as strong a grower as frutescens."

A SMALL YARD.—"Ignoramus," Philadelphia, says: "I am in search of information in your line, and do not hesitate to lay my wants before you. I have moved to a house that has got a good yard to it, something that I have never had before, although I've longed for it so much. Now I want a garden, and come to you for advice as to how to lay out my plot, and as to what to plant. No vegetables. Size, 20.5 x 11.9. Please to assist me in my troubles and I will be ever so thankful."

[Those who do not know the blessings they possess in a few acres of ground around their dwellings, may imagine the pleasure it would give one brought up in a large city, who, like this correspondent, can feel so happy over a bit of ground not larger than a good sized parlor would occupy. No one could tell definitely how to make the most of a little place like this, without seeing it, and knowing something of the tastes of the owner. Something green all the year is desirable, and yet something that will not take much room, and for this a bush or so of the mahonia, yew, or Euonymus japonicus would be very desirable. A narrow walk through the middle, edged with box, or with conch-shells, if the four or five feet borders are to be filled with flowers. On the neighboring fences or walls, hybrid perpetual roses or noisettes might be trained. In some of the more shady nooks, periwinkle might be planted. If the garden is somewhat shaded, and a hydrant and hose at hand, it would be an excellent place for a rock work and ferns, should the owner incline to that class of plants,—or if it is sunny, a rock work for hardy cactuses, sedums and other succulents would be desirable. As a rule, more pleasure will be derived from some specialty of this kind in a small place, than in gathering up anything that comes first.—ED. G. M.]

RARE EVERGREENS AT MR. JOHN WANAMAKER'S.—A correspondent says: "While on a recent visit to 'Lindenwood,' the residence of Mr. John Wanamaker, at Jenkintown, near Philadelphia, I was pleased to notice a few very fine specimens of rare evergreens. Among them were two beautiful Nordmann Firs, (Picea Nordmanniana), one of them at least twelve feet high and proportionally wide. It stands in an open space between the house and the road, and its dark green foliage contrasts strongly with the gray of a large Himalayan Pine (Pinus excelsa), eighteen feet high, and ten feet broad, which stands near it.

"There are also good specimens of the Stone Pine (Pinus cembra), Cephalonian Fir (Picea Cephalonica), and different varieties of the Retinospora. I was shown an Oregon Maple that was planted as a memorial tree by Mr. Wanamaker and eleven of his family and friends.

"One thing that I noticed, was the remarkable thriftiness of several large Hydrangea paniculata grandiflora, which were growing immediately under some large oaks, showing conclusively that it is a shrub that will grow in the shade, and where it must necessarily be very dry in summer.

"The finest rhododendrons I ever saw, are growing in large beds around the house, and although the ground is very elevated, and is exposed to the winds, the foliage is very little, if any, browned. The beds on the north side are sheltered by some bundles of corn-stalks. This is the only protection given to them. Much credit should be given to Mr. Alex. Young, the efficient gardener, for the excellent appearance of the whole place, especially in the large palm house, which he takes the greatest interest in. He has a great many rare palms and orchids, in an excellent state of cultivation."

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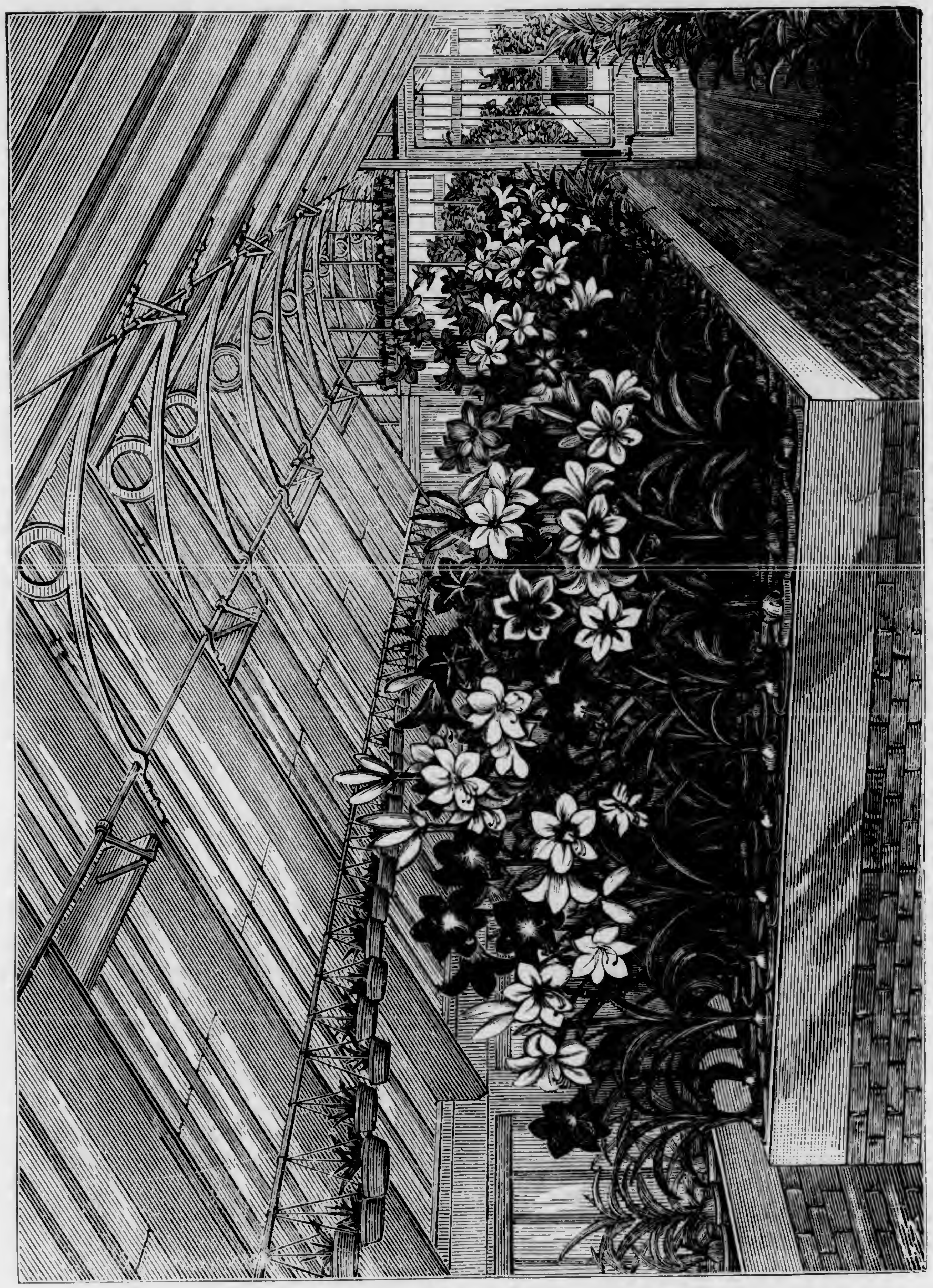
GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Very much more attention is being given to the culture of Amaryllis as pot plants, than formerly. We know a friend who has a fair collection, and he is rarely without some one in flower the whole year round. Though they well repay a close study of their peculiar wants, they are fortunately so constituted as to do fairly well under even shabby treatment, and are therefore nice things for novices who have little practical experience in plant growing. The friend to whom we have reference, moves all his plants out of doors to a partially shaded place for the summer. It is customary with some of the best growers to give the plants certain seasons of rest, when the pots are set on their sides, and the soil and bulb allowed to become dry; others insist that this is not necessary but that the plants may be kept on just as other plants are, and that they will do equally well. There is evidently much to learn about these plants in connection with American treatment. We have had from time to time the experiences of some correspondents, and more would be desirable. In the Old World the culture is advancing as fast as in ours, and some nurserymen make growing Amaryllis an especial branch of their trade. A large house full of flowering plants is a particularly brilliant object and draws crowds to admire them. We give on p. 104 an illustration of the house of Mr. Williams, who is well known in America by his advertisements in the GARDENERS' MONTHLY. It may help those who love to look on things critically, to say that in these modern times, botanists have removed nearly all the kinds we know as Amaryllis to other genera, and these illustrated in particular to Hippeastrum. The old Amaryllis Belladonna is nearly all that is left to Amaryllis proper. But the term, Amaryllis, as signifying the whole family, without any regard to any special genus in the family, is very convenient, being so widely known, and will be long retained by plant growers.



Amaryllis House of B. S. Williams, London N., England. (See page 103.)

COMMUNICATIONS.

FAILURE OF HER MAJESTY ROSE.

BY J. N. MAY.

At page 42, your correspondent, Mr. S. F. Terwilliger, asks if this rose ever grows, and is free of mildew. To the first question, I would say emphatically yes, it grows; with me it is by far the strongest growing rose I have ever seen. I have just pruned a house of it here, which had plenty of canes 14 to 16 feet long, grown since the 9th of January, last year, the date they were planted. They were then very small plants. Some few of these plants flowered, and grand

flowers they were, too. The largest one I exhibited at the Spring show of the New York Horticultural Society measured 19½ inches in circumference, and very fine in color considering the plant which bore it only landed in America on or about Christmas Day—a little over three months before the bloom was exhibited. These plants all grew in a very healthy way till we stopped firing; then, as abundance of air was left on the house during almost all kinds of weather, if mild, they very quickly began to get affected with mildew, and continued to be so during the entire season. But after careful consideration of this subject, I am somewhat inclined to think that the extreme change this rose was subjected to had something to do with this. It must be borne in mind that these plants had probably never been subjected to any forcing at all in England, but as soon as they reached these hospitable shores they were made great pets of and immediately put into the warmest corners of every establishment where they were distributed to, and forced for all that was possible to do—so much so, that the rose did not get the slightest chance to become acclimatized. To show that I think there is considerable cause for mildew in this treatment, I kept a few plants cool during the winter, and in the spring when shipping other goods, I sent one customer in a Southwestern State, six of the original plants and six young ones which I propagated myself—all grafted plants. The original plants grew to be 12 to 15 feet high during the summer, and scarcely had any mildew the whole season; while the younger plants were very badly affected from the date of planting—so wrote my customer in November last; and although this may be an exceptional case, yet it goes to prove that the hard race to which this rose was subjected, had something to do with the bad character it has got for mildew. The house in question, which I have today (February 12th) started, I shall treat all through just as I do all the other varieties of Hybrid Remontants, and if I succeed in making it bloom to my satisfaction, I will then give the readers of the MONTHLY opportunity to come and see it in its blooming state, due notice of which I will give them through the columns of this paper. If it is a failure, I will also be frank with your readers, and tell them so.

Your correspondent also asks if I will tell him why it is that the Bennett gives him so many nasty, dirty, purple buds at the same time, and on the same plants, that give the bright handsome ones. I have given this matter considerable thought all through this and last season, and can only account for it by the deficiency of some necessary element in the soil in which the plants are growing to produce the requisite coloring matter for all the buds at the same time, as the same thing often occurs in other bright-colored roses. *Summit, N. J.*

THE NAMELESS BEAUTY ROSE.

BY NANZ & NEUNER.

You had a short article about the Rose, Nameless Beauty, or Namenlose Schöne, in your magazine last year. Let us proceed to give our experience. To try the winter-blooming quality of this rose, we imported a number of plants, and planted 150 on a bench last fall, and we must say, were pleasantly surprised with the result. Only about three to five per cent. of all the shoots miss to produce buds; most of the plants had three to four buds and flowers at one time. The habit is dwarf and compact, foliage light green and luxuriant. Scent, very sweet; color, pure white, with very light flesh-colored tinge in center. With one word, this valuable Tea Rose blooms more freely than any other sort we know of, and we don't doubt that this rose will become popular as a forcing as well as a bedding rose. *Louisville, Ky.*

[These specimens of Namenlose Schöne, or Nameless Beauty, fully bear out the character given in Germany, and which led us to reproduce the engraving. On opening the box the fragrance of the pure white flowers at once filled the room, and the long stems of the clustered flowers bore out the account we have already given of them.—Ed. G. M.]

PANCRATIUM OVATUM.

BY STEWART RITCHIE.

This fine Amaryllid has to be seen in full bloom to be appreciated. It bears several spikes, each of which is surmounted by a large umbel of pure white funnel-shaped flowers. These, when backed up with its beautiful foliage, make it a noble and attractive plant. Of all the pancratiums I consider this one of the finest. It requires a stove or warm greenhouse to grow it to perfection. I find the following treatment to suit it perfectly: They are increased from offsets that push up from the base of the flowering bulb, and which, if severed from the bulb that produces them, with the roots which they have made entire, will at once commence to grow.

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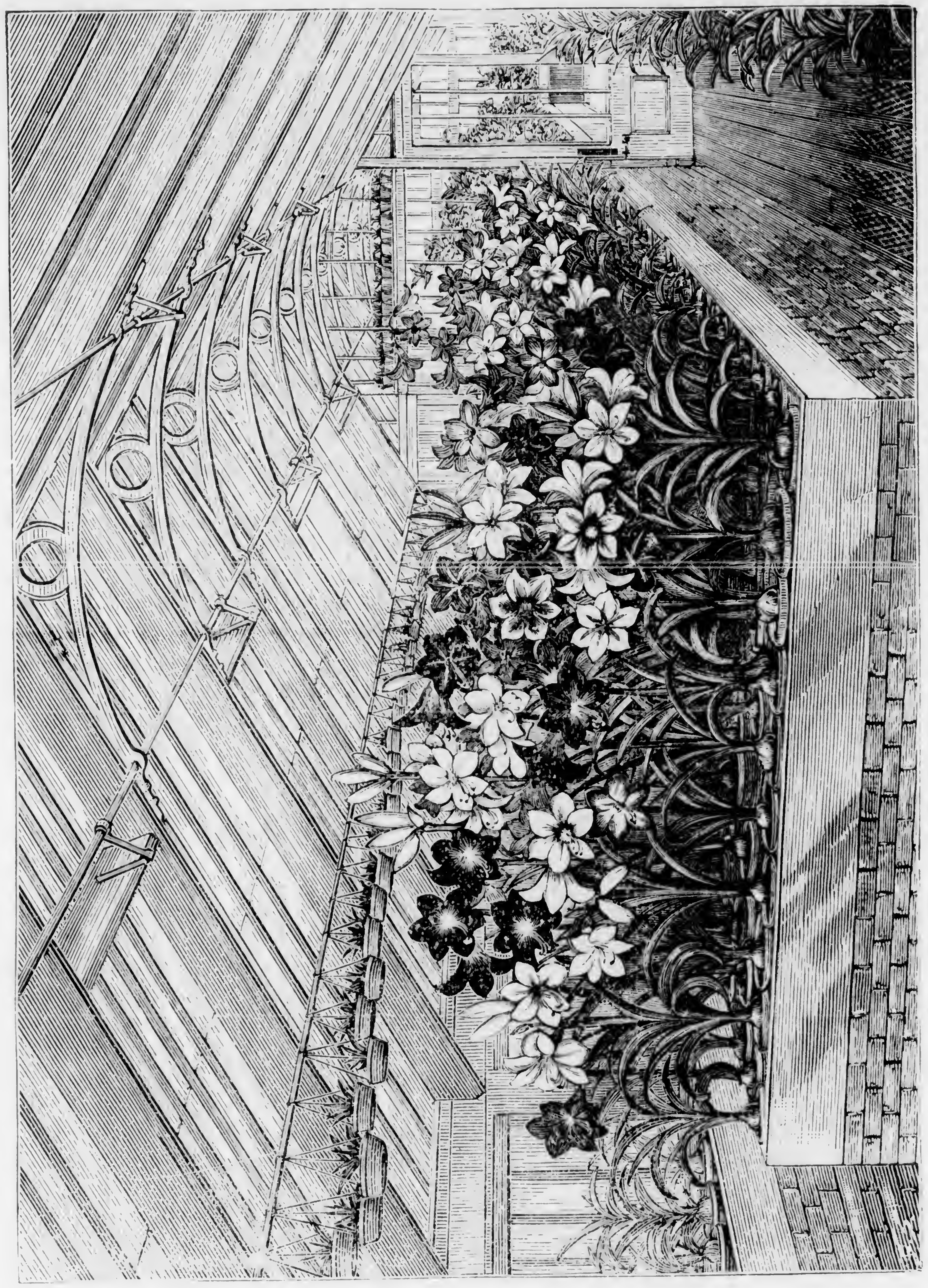

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INTENTIONAL SECOND EXPOSURE

them out of the pots and shake the soil away, so as to separate them without injury to the roots. But this is an operation which should not be resorted to often, as they do not like being disturbed at the roots, and offsets increase faster by being left on the parent plant till there are several of them to take off. As they do not like to be meddled with in a growing state, the operation should be performed when they are at rest. The young stock thus removed should be potted in small pots, the size of which will be regulated by the size of the bulbs; on no account should they be over-potted, as, if too much room be given them, they will never do well, and the soil is apt to sour. Therefore, the principal thing to avoid in cultivating this class of plants is over-potting. The best soil to use, is a good loam, well incorporated, with a little sand and rotten cow manure. In potting, disperse the roots evenly in the pot, keeping about two-thirds of the bulb above the soil, which should be rammed well with the potting lath, to make it quite solid. They should have plenty of light. Be careful not to over-water them until the roots begin to grow freely, after which they must have as much as will keep the soil moderately moist until after their growth is made. If the plants are small, it is better to keep them growing for the first season, the idea being to get them as large as possible. When they fill a 7-inch or 8-inch pot well with roots, then they can be treated for flowering, which should be done by giving them a good rest, say for four or five months. If you want them to bloom about Christmas time, let them rest during the summer months, giving them as much water as will keep them from getting dust dry. As this pancratium belongs to the evergreen section, it should never be allowed to get too dry, or will suffer. About the first of November the pots should be examined, to see if the drainage is all right, or if they need a shift into a larger pot. Now is the time to do it, but remember they must not have too much pot room, or your flowers will be scarce. You can have them in flower at any time of the year, according as you regulate their resting period, but I should think winter preferable to have them in bloom, as any one who can boast of a garden and greenhouse has plenty of flowers out of doors in the summer. They are not much subject to insect pests, although green-fly, thrips, and scale will live upon them if not taken good care of. A liberal use of the syringe and tobacco smoke will exterminate the former, and the latter can be removed with the sponge.

Waterville, N. Y.

NOTES OF A VISIT TO JOHN WANAMAKER'S GREENHOUSES.

BY J. M.

At the residence of Mr. John Wanamaker, at Jenkintown, Pa., there is quite an extensive range of greenhouses. The whole place is under the management of Mr. Alexander Young, a gardener well known about Philadelphia for his love of plants. Passing through the place recently, under his guidance, afforded a rich treat, everything being in first-class condition, and evident care being taken to have everything orderly, and arranged with an eye to neatness. There is a house or two devoted to the production of flowering plants, to be used temporarily in Mr. Wanamaker's city residence; others for the production of cut-flowers for the same purpose. There is also a house devoted entirely to orchids, rare foliage plants, ferns and similar nice things; and in this house it seemed that Mr. Young was very much at home. Among other interesting things was a group of Nepenthes, in which were the following beautiful sorts: Intermedia, Mastersiana, Rafflesiana, Morganiana, Hookeriana, Chelsoni and Hookeriana elongata. Evening approached before the half of the nice things could be noticed, but a note was made of the following—a few only of what are there: Pritchardia grandis, Areca nobilis, Angræcum eburneum supurbum, Anthurium crystalinum, Dracæna umbraculifera, Croton Andræanum, Ceroxylon niveum, Latania rubra, Pritchardia aurea, Sphærogyne latifolia, and some extremely well-grown plants of the old, but most useful orchid—Bletia maculata, or Phajus maculatus as it is properly called now-a-days—which were in full flower.

Philadelphia, Pa.

STIGMAPHYLLUM CILIATUM.

BY CHARLES E. PARNELL.

The ciliated-leaved Stigmaphyllum, (S. ciliatum,) is a very handsome, free-flowering stove or warm greenhouse plant, belonging to the Natural Order Melpighiaceæ, and may be described as being a twining evergreen plant growing from 3 to 6 feet in height, having opposite cordate, ciliated, glaucous leaves, and the bright yellow flowers, which closely resemble some species of Oncidiums, are produced in the greatest profusion in axillary umbels, from three to six large flowers being produced on each umbel. It flowers more or less throughout the year, but is at its best during the late summer and autumn months. It is a native of Brazil, from whence it was introduced in 1840, and it first flowered in England during the summer of 1841. It is a plant easily grown, doing best in a compost of two-thirds well-decayed sods, and one-third well-decayed manure. In potting, use porous or soft-baked pots, and see to it that they are well drained. Be careful to allow them an abundance of pot room in which to develop their spreading, fleshy roots.

In cultivating this plant, it is well to remember that it can be grown for two distinct purposes, viz.: as a climber for outside decoration during the summer and autumn months, and as a climber for the decoration of the stove or warm greenhouse during the autumn and winter months; and to do the plant justice, it should be grown specially for one purpose only.

When grown for outside use, it should be given a sunny situation, a deep, well-enriched soil and copious waterings during seasons of drought. The plants should be examined occasionally during their season of growth, and their shoots so trained as to cover the desired space. The plants can be placed outside about the tenth of May, and taken up towards the end of September. In potting, use as small pots as possible, and place them where they will receive an average temperature of 55°. Water should be given as sparingly as possible at all times, the object being to keep them in a dormant state until it is time to plant them out. But in order to ensure success, it is absolutely necessary that the plants be strong and healthy before they are planted outside.

When grown under glass, they should be planted out in a nicely prepared border, and grown on carefully. Water should be given as often as necessary during the plant's season of growth, and they should be syringed occasionally. After the plants cease blooming, it is well to keep them rather dry at the roots for some two or three months, in order to give them a period of rest.

When grown outside, the plant is perfectly free from all insect pests, but when grown under glass, it is often troubled by the red spider; so to guard against this destructive pest, it should be freely syringed.

Propagation is effected by cuttings of the half-ripened wood placed in sand and given gentle bottom heat, or the plant can be propagated by layering during the summer season; the latter method being to amateurs the best way in which to increase their stock of plants.

The generic name is derived from "stigma," a stigma, and "phyllum," a leaf, the stigma being foliaceous; and the specific alludes to the hairy margins of the foliage.

Queens, N. Y.

[We agree with Mr. Parnell; this curious and beautiful climber is worthy of a prominent place among out-door summer climbers.—Ed. G. M.]

EDITORIAL NOTES.

Two Promising Florists' Roses.—Puritan, white, and Mrs. John Laing, light rosy pink, are getting some reputation.

Mealy Bug.—A correspondent of the *Garden* finds that soapy water with about a wine-glassful of coal oil to one gallon, syringed on plants covered with Mealy bug, will destroy the insect.

Peculiar Roses.—Never a new rose appears, but every now and then some one arises to pronounce it "no good." It may be a kind that has been in good and healthy existence for a quarter or half a century, but let it once become a popular florists' flower, and some one finds out that it will not grow, will not be healthy, or something wrong or other with it. This should suggest that treatment may be wrong, and no doubt it often is.

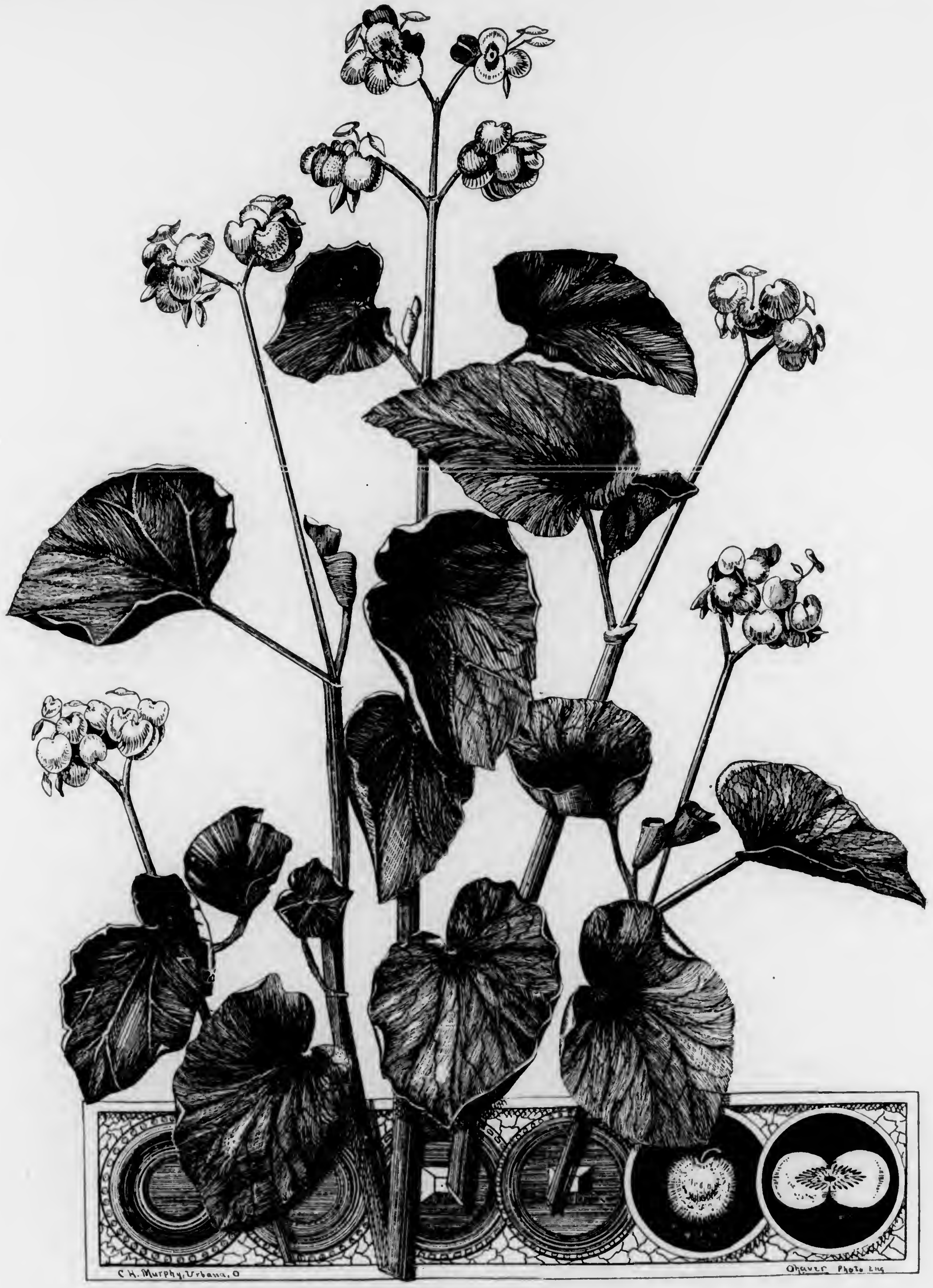
Standard Geraniums.—Last year some growers exhibited these in Paris, trained to a head on single stems, and they seemed to strike the popular favor.

The Popular Roses.—For cut flowers with florists, Bennett, American Beauty and Mermet continue very popular this season.

Iron Greenhouses.—Mr. Falconer, in a note to *American Florist*, tells that Mr. DeForrest, at Madison, one of the largest rose growers in America, proposes to build all his houses of iron in future.

"Over-heated Wood.—People are not generally aware of the danger of fire connected with the exposure of wood for long periods to a comparatively moderate temperature. Mr. Braidwood, superintendent of the London fire-engine establishment, stated before a committee of the House of Lords, that, by exposure to heat not much exceeding that of boiling water, timber is brought into such a condition that something like spontaneous combustion takes place; and that it may take eight years for the heat from pipes charged with or used to convey steam, hot water, or heated air, laid among the joists of a floor, or in the heart of a partition, or elsewhere in a building, incased in timber, to induce the condition necessary to the actual ignition of the timber."

The above is from the February *Swiss Cross*, but the Gardeners' Monthly has for many years past urged the fact on the attention of greenhouse builders. It may be added that enclosed wood fires quicker than when the wood is on some sides surrounded by the outer atmosphere.


C H. Murphy, Urbana, O
Ohaver Photo Eng

Begonia semperflorens gigantea rosea.

Begonia semperflorens gigantea rosea.—Under this name we received from Mr. C. H. Murphey, Urbana, Ohio, some blooms on which we commented favorably in our last. They were indeed among the most beautiful flowers we ever saw in the Begonia family. We now give an illustration of it. Mr. M. tells us that it was raised from a cross between B. semperflorens and B. Roezli. It is a vigorous strong growing plant, round and bushy in form, the everblooming rosy carmine flowers being borne along the stems but well up above the foliage. To our mind it is one of the grandest additions to winter-blooming Begonias that we have had since the introduction of Begonia rubra.

Paper Flower Pots.—This is the latest invention, according to the *Evergreen*. A great advantage over the ordinary pot is claimed for them in this that they will not break when plants are shipped in them. On the other hand it is claimed that the want of porosity is against them as compared with the clay pottery in use.

NEW OR RARE PLANTS.

New English Roses.—We have had lists of the best French roses of recent introduction. It is claimed for two new English Hybrid Perpetuals —Grand Mogul and Silver Queen—that they also are of very high character. They are seedlings from Paul & Son.

Leptosyne maritima.—This pretty California annual obtained much favor as a florists' cut flower in Philadelphia last winter, having been introduced chiefly by Lonsdale & Burton. It is one of the " Daisy " class, as it is becoming fashionable to call all compound flowers used by florists. Plants for winter flowering must be sown about mid-summer.

The Puritan Rose.—This pretty seedling of Bennett, for which Evans, of Philadelphia, gave for the whole stock $2,000, is growing in favor with florists.

A New Kalanchoe—K. carnea.—In many windows and old greenhouses, a plant is commonly found that roots easily from the leaves. These are somewhat fleshy, and root where they fall. We never heard any common name for it, but it was known to gardeners as Bryophyllum calycinum. A closely allied plant has been introduced from South Africa by Messrs. Veitch & Sons, which has been named as above. The habit is much the same as the old favorite, and it has in addition, fragrance and pink flowers.

Primula obconica.—This new species, introduced from China by Veitch & Son, through Mr. Maries in 1880, and already noticed by a correspondent of the Monthly, is increasing in popularity, and promises to be as widely known as the famous Chinese Primrose of the olden time. It is a much stronger grower, and produces an immense number more of flowers.

SCRAPS AND QUERIES.

Senecio cineraroides.—This is the name of the plant referred to in the following from Mrs. Mary Ann F., West Phila. : "Will you kindly state the class, also its English name, to which the enclosed specimen belongs? The stalk is a straight, stiff one, the flowers come in clusters of 8 and 10 bunches on the very tip. We have a buttonwood geranium, and at first supposed it of that class. The leaf enclosed is the largest one on stalk. The stalk is about 10 inches high."

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Yellow Fuchsias.—A "Subscriber," Beverly, N. J., writes: "In the February number of the *American Garden*, there is a letter signed by Mr. Peter Henderson, of Jersey City Heights, in reply to a query, 'Is there such a thing as a yellow fuchsia?' in which he states, 'there is not, and never is likely to be, at least of a color to be called honestly yellow,' etc.

" Now, may not the F. fulgens, with its beautiful long tubular bunches, of rich chrome colored flowers, be very properly classed as a yellow fuchsia? It certainly is not necessary, to entitle a flower to be called yellow, that it must be of that particular shade existing in the dandelion, etc."

Destroying Thrips.—*The Country Gentleman* remarks that the Editor of the Gardeners' Monthly permitted a correspondent to "misspell badly the name of this insect." We are obliged to our friend for the correction. It shows how, when a bad habit is acquired, it is difficult to break from it. There is no singular to thrips, any more than to scissors. It is a thrips or the thrips, one or more, as in "a scissors" or "many scissors."

Heating by Steam.—It is generally believed that steam heating is not economical, as compared with hot water, in very small plant houses. A Philadelphia amateur informs us that he had a comparatively small house heated by an Exeter steam boiler, and knows from actual experience that it required no more attention in cold weather than hot water, and was in every respect more economical and more satisfactory.

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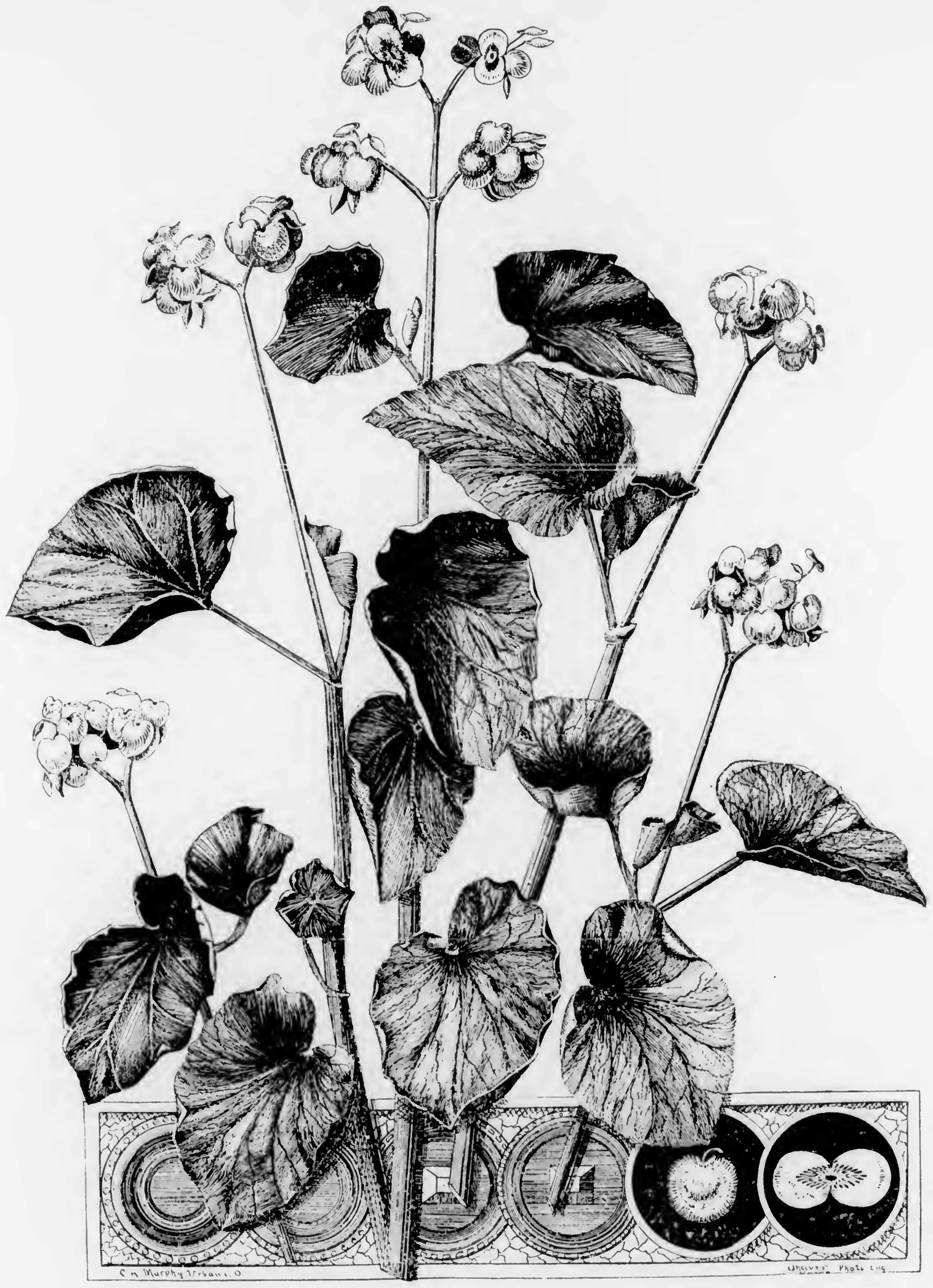
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YELLOW FUCHSIAS.—A "Subscriber," Beverly, N. J., writes: "In the February number of the *American Garden*, there is a letter signed by Mr. Peter Henderson, of Jersey City Heights, in reply to a query, 'Is there such a thing as a yellow fuchsia?' in which he states, 'there is not, and never is likely to be, at least of a color to be called honestly yellow,' etc.

"Now, may not the F. fulgens, with its beautiful long tubular bunches, of rich chrome colored flowers, be very properly classed as a yellow fuchsia? It certainly is not necessary, to entitle a flower to be called yellow, that it must be of that particular shade existing in the dandelion, etc."

DESTROYING THRIPS.—*The Country Gentleman* remarks that the Editor of the GARDENERS' MONTHLY permitted a correspondent to "misspell badly the name of this insect." We are obliged to our friend for the correction. It shows how, when a bad habit is acquired, it is difficult to break from it. There is no singular to thrips, any more than to scissors. It is a thrips or the thrips, one or more, as in "a scissors" or "many scissors."

HEATING BY STEAM.—It is generally believed that steam heating is not economical, as compared with hot water, in very small plant houses. A Philadelphia amateur informs us that he had a comparatively small house heated by an Exeter steam boiler, and knows from actual experience that it required no more attention in cold weather than hot water, and was in every respect more economical and more satisfactory.

INTENTIONAL SECOND EXPOSURE

An Aphis Injurious to Rose Leaves.—Mr. John White, of Pittsfield, Mass., sends us specimens of an aphid, which seems, he says, to attach itself to a leaf, and to seem almost inseparable from it, doing much damage to the foliage. Prof. Riley decides it to be one of the aphid family, probably the one known as Siphomophora rosæ. These are attacked by a parasite which destroys and puffs them up, making them seem much larger than when in their natural state—as house-flies are attacked by a fungus in the fall of the year, and are attached to glass by fine threads, as most observing persons have noted. Possibly in some way these aphides get attached to, and destroy the rose leaves, but we have no positive information at hand on this point.

Vapor of Tobacco.—Mr. Charles Joly, of Paris, referring to page 12, says: "Please do not forget that the smoke of tobacco, and the vapor of tobacco juices, have altogether a different effect, particularly in greenhouses on delicate flowers."

A Scarlet Carnation.—A correspondent inquires for the "best scarlet carnation for a market grower." We hardly feel warranted in naming any one as "the best," for each grower has his fancy. We should be disposed to look on Alegatiere, a well-known French variety, as one of the best to grow for profit, but we are open to conviction if others have the evidence.

Blindwood on Roses.—A correspondent ventures an opinion that "the reason why so many complain of blindwood, is, that they use nitrogenous manure too freely. Every gardener knows that some kinds of manure make vegetables grow all to leaf. We give rich stable manure to cabbages and celery, because we want leaves, but when we grow beans and peas, we want flowers, and stable manure we do not use till it is almost rotted away. So with roses, I think."

Manuring Roses.—A correspondent says a rose-grower, with no experience in the business, had a magnificent house of 500 roses, and killed them all by putting a handful of guano at the roots. We have seen men with loads of experience do just as funny things. They are not always greenhorns that put gas tar on hot water pipes. The chief trouble comes from not reading the Gardeners' Monthly.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

In no class of vegetables has there been so much improvement of late years as in celery. The chief effort of improvers has been in the direction of getting plants with an abundance of short and thick leaves. The old tall form, with only some five or six stalks fit to eat, costs immensely in earthing up, and is not the best adapted to dainty tables. The Boston Market was a great advance in this direction, since when there have been a number of dwarf and stocky kinds introduced. It will not be long before we get varieties so broad and stocky in their growth, that a simple tying up of the leaves, as used to be done with the Cos lettuce, will be all that is needed to blanch the leaf stalks. This will save an immense amount of labor in earthing up. It is still a question whether it is best to dig a six-inch deep ditch in which to plant celery, or to set the plants on the surface of the ground. Where the culture is by the plough, ditches are seldom thought of, as the plough can lift the earth required for blanching; but for garden or spade culture, the lifting of so much earth adds materially to the labor. Again, the ditch or trench permits water to be used to good advantage, and the manure is dug in where it will do the most good. On the other hand, it usually requires more manure for trench culture than for surface culture, because sub-soil is usually poorer than surface soil. It is also charged that pithy celery is more apt to follow trench culture than surface culture. There are some, however, who contend that pithy celery comes from a too copious supply of water to celery in trenches, rather than to the fact of trench culture. All these differences of opinion, however, show how little is really known of the exact conditions necessary to the best success in growing celery.

Very many of the answers as to the best methods of growing fruits and vegetables, depend on circumstances. The grower of tomatoes for instance, lets the plants trail over the ground at will, when he has a few acres under culture; but those who have little ground to spare, find great advantages in the use of stakes or trellises. Besides, much finer fruit can be had from plants, supported, than from plants left to ramble at will. They do best on stakes set firmly in the ground, four feet apart. On account of the great weight of a tomato in fruit, it is very difficult to keep the plants tied to smooth stakes. For this reason, portions of trees that afford 6 inches or so of side branches, are excellent when they can be had. When nothing but smooth stakes are to be obtained, the twine used for tying up the plants should first have a lap around the stake, which is some safeguard against slipping. These heavy tomato stakes, should be planted before the tomato vines are set.

It is not generally known that cucumbers for garden use, do much better when on some such stakes as recommended for tomatoes. They climb small by tendrils, which cannot attach themselves to thick stakes. For cucumbers, therefore, a lot of twiggy brush-wood should be tied around the heavy stake. The cucumber will then climb up easily.

In the Eastern States, much difficulty is being found in the asparagus culture, from the ravages of the Asparagus beetle. It is a very pretty little insect, but a terrible enemy to deal with. It can, however, be readily destroyed by the use of Paris green or London purple. It must not be forgotten that this is a poison very dangerous to human life; and the application, therefore, should only be entrusted to careful hands. We should look as closely after its use, as we would to a lot of gunpowder. The application should not be made till after all cutting for the kitchen has ceased for the season; and it must be well seen to that none of it blows on to cabbages, lettuce or other crops that would collect it between their leaves. As we might say of gunpowder to the community, so we might say of arsenical poisons to the gardener and fruit grower: it is one of the most beneficial of discoveries, but must be intelligently and carefully used.

Dwarf pears—that is to say, pears grafted on quince roots—are not nearly as popular as they were a few years ago, chiefly because it requires very much more intelligent knowledge of the principles of gardening to attend to them properly, than most persons can give them. The Standard pear, when once planted, will in a measure take care of itself. The Dwarf pear must have continual knowledge and skill. Hundreds of thousands of dollars have been wasted on them. The man who looks after the cow or the horse, and can mow and keep clean the grass and grounds, cannot be expected to manage a Dwarf pear tree. Still, in good hands, the Dwarf pear is a very desirable thing to have.

In planting Dwarf pears, it is very important to have them on a spot that has a moist sub-soil, either naturally or made so by sub-soiling or mixing some material with the soil that will give out moisture in dry weather. Trees already planted on a dry gravelly sub-soil, should have a circle dug out two feet deep, and two or three feet from the tree. This should be filled up with well-enriched soil. If the Dwarf pear does not grow freely, it is a sign that something is wrong. It should at once be severely pruned, so as to aid in producing a vigorous growth.

Grafting can be continued till the buds of the trees are nearly pushed into leaf. Sometimes, from a pressure of other work, some valuable scions have been left on hand too late to work. It may be interesting to know, that if such scions are put into the ground, much the same as if they were cuttings, they will keep good for six weeks or two months, by which time the bark will run freely, when the scions may be treated as buds, and will succeed just as well as buds taken from young summer shoots.

Buds that were inoculated last fall should not be forgotten; but as soon as vegetation has pushed forth, the buds should be examined, and all other issues from the old stock taken away. It may also be necessary to make a tie, in order to get the young shoot of the bud to go in the way from which you would not hereafter have it depart.

Few things mark a well-kept garden better than an abundance of all kinds of herbs. Now is the only time to make the beds. Sage, thyme and lavender grow from slips, which may be set in now, precisely as if an edging of box were to be made of them. They grow very easily. Basil and Sweet Marjoram must be sown in a rich, warm border.

COMMUNICATIONS.

KIEFFER PEAR, DOUBLE WORKED.

BY EDWARD HARRIS.

In reply to your inquiry in regard to double working the Kieffer Pear (in March number) I would state I have two trees which were originally Duchess.

When the Kieffer craze struck us here these trees, then about three or four years old, were cut down close to the ground and a scion inserted. They have done very well and I have gathered some very handsome specimens from them, but I have not seen any difference in quality between them and those grown on standards. It would be very desirable to raise this pear of average good quality, but how we shall do this does not yet appear, unless it is all in the manner of ripening. The best I have ever eaten were grown on a light sandy soil. Peter Kieffer's soil, is, I think a pretty stiff clay. With me they vary exceedingly and when I get a good one it is a matter of good luck purely. *Moorestown, N. J.*

[We are glad to get this note as it gives zest still to the inquiry, why a pear sometimes good should not always be so?—soil, stock, and handling, each may have some influence. If we could find out how much, the pear grower would have the whole matter in his hands to great profit.—Ed. G. M.]

NOTES ON MUSHROOM CULTURE.

BY THOMAS BENNETT.

I am glad to find the mushroom is getting to be appreciated in this country. Not many years ago, it was little known or valued, except by a few. Now its price is regularly reported with other vegetables, in the market notes of the New York and Philadelphia newspapers. I have been many years trying to establish a trade, by encouraging the growth of this valuable esculent amongst the people.

The last United States Agricultural Report for 1885, has done good work in describing the edible kinds; as found growing wild in places congenial to their growth; in setting forth the nutritious qualities of these as compared with other food; and also in showing their commercial value as carried on in the old countries of Europe and Asia—from England and France to China and Japan. It appears, as a people, we are behind the age in our knowledge and appreciation of this most nutritious of plant food; for, as compared with flesh or vegetables, it has been found by analysis, we are told, to be superior to any of these, and its nutritive qualities more highly concentrated. But whatever value may be found in the wild or natural growth, it appears to me it is to the cultivated mushroom we must look for our principal benefit or advantage in these Northern States. These can be grown all the year round, with some trouble, cost and expense, of course; but whether for marketing or home consumption, in most cases will now, I think, amply pay the grower.

Twenty years ago, I raised more than I could sell in New York city at any fair price, and I longed for a good market. A few restaurants and hotels, such as the Delmonico Brothers, were my principal customers. Times have changed since, and it appears to me we are only in the beginning of a greater change.

The more general the artificial cultivation of mushrooms becomes, the more they will be appreciated, and, of course, the more in demand. Without a market there is no use in trying to raise them on any extensive scale. Out-door cultivation is of little value in this climate. They must be grown under cover to any permanent advantage. The old-country plans must be modified according to circumstances, and here is where the novice often fails.

Another, and the principal cause of failure is, the want of proper preparation of the manure. I think it is not generally understood that the same manure that will grow a poisonous toadstool today, will, in three or four weeks hence, raise an edible mushroom. No matter how good the spawn is, if planted in badly-prepared material, it will produce a more or less unhealthy—perhaps poisonous—growth.

It is also a great mistake to suppose that mushrooms grow better in the dark than in the light, or that darkness is essential to their growth. In my practice, the reverse is true, and mushrooms grown in the dark will be found both tough and less wholesome than those grown in the light.

At least a little air and a little light are necessary for wholesomeness' sake, as I think I stated to you in a former communication on this subject. This is said with a knowledge of the fact that they will grow in the dark very well, and that we are told the French grow large quantities in underground excavations, quarries or pits.

A certain English writer or compiler has told us very gravely, that salt is useful to a mushroom bed. This is contrary to my practice, and I believe has no precedent in the encouragement of any fungous growth; but the contrary I have proved to be a fact. However, we know that salt sweetens land, and may, in course of time, be favorable to mushroom growth out of doors, but fresh salt is very different. I will not encroach on your valuable space by arguing this question, as everyone may prove it for himself. Let any person put a pinch of salt on the pileus or cap of a growing mushroom, and leave it there for twenty-four hours, and then look at the result. If he thinks it has improved its growth, then I give up; but if it is dead, and looks most disgusting, then there need be no more said, I think, on this matter.

They are now rightly named hot-house mushrooms, and they must have artificial heat for six or seven months of the year, in these latitudes. In the summer they require no artificial heat, but must be grown in a cool cellar or house adapted for the purpose, where the thermometer will not register more than 65°; 60° being their proper growing temperature.

After a practice which extends over forty years, I have concluded that a quart to every square foot is a good yield for a mushroom bed in this country. Some beds will yield a great deal more. Their time of growth in an ordinary greenhouse, includes from about the 1st of October to the 1st of May, sometimes longer, but this chiefly depends on the temperature of the house.

Chambersburg, Trenton, N. J.

MARKET APPLES FOR THE VICINITY OF LANSING, MICHIGAN.

BY PROF. L. H. BAILEY, JR.

Until the last few years the Baldwin has held the first place among market apples. The increased severity of the winters, resulting from the destruction of timber, has caused the Baldwin to suffer above most other popular varieties. During the winter of 1884-5 fifty old trees were killed in the College orchard, of which over forty were Baldwins, the remainder being mostly Rhode Island Greenings. In fact, there is not a vigorous tree of these varieties left in the orchard. All others among the market sorts were not injured. It is more and more evident that the Golden Russet is one of the best market apples for this region. The tree is remarkably hardy and vigorous and a good bearer. The apples are uniform in size and color, very firm, fair, and good keepers. In market they bring twenty per cent. less than Baldwins, but this difference is overbalanced by their productiveness and hardiness. Russets should be barreled in the fall to prevent withering. The Spy is a tardy and unreliable bearer; the apples are often very imperfect, and they are too tender for distant markets. I should not recommend it here for the flatter lands. Fameuse is one of the best when the fruit is fair, but it is unreliable. Canada Red, top-grafted, is one of the very best, and in this vicinity undoubtedly ranks next to the Russet, or perhaps superior to it. The St. Lawrence, Oldenburgh and Twenty Ounce appear to be among the best fall apples for this vicinity. The Oldenburg demands a close market, however, as it decays soon. The Russian apples of recent introduction are not yet sufficiently known to be recommended for profit.

[The above good hint is from the Bulletin of the Agricultural College.—Ed. G. M.]

A TENNESSEE FRUIT REGION.

BY C.

I thought a description of this section would be of some interest to your readers. I have visited several localities in search of a good fruit-growing section, where lands could be had at a reasonable figure, and where the climate and air are conducive to health. I think I can safely recommend as a fruit section, Lawrence county. It is situated in Middle Tennessee, at an altitude of 1,000 feet above tide-water. The surface is level and undulating to broken. The latter is along the streams. The level and undulating lands are the great reservoirs from which numerous streams and springs flow. The soil is a mulatto-brown and underlaid with a red and yellow subsoil. As a fruit growing section, this highland rim, cannot be excelled anywhere in the State. Apple trees reach the same maturity here in five years as they do in the North in ten, and retain their vigor at a greater age. Apple and peach trees will bear some the second year and will pay a handsome profit at five. The red mountain Limbertwig and the Ben Davis, will pay an immense profit. Mr. Rainey kept these varieties until June, and sold his Ben Davis at $2 per bu. He says this is a better fruit section for apples than round Chattanooga, where fruit lands are selling from $50 to $75 per acre. He stands at the head of his profession, as a fruit man, in the South. He has set out one hundred acres in apple orchard near Summertown. Mr. Marsh has some of the finest peach and apple trees I ever saw for their age. His trees bore some the second year. The best soil for all kinds of fruit is the high table land, and the light colored soil. Pears and plums are large and finer flavored than those growing in the North. They can be had from June to October. All the small varieties of fruit do well. Blackberries, strawberries, raspberries and grapes are found here in abundance. All lovers of fruit can have their tables well supplied the year round. There is no doubt in my mind that this will be the fruit belt of the South. One hundred miles south of here apples cannot be successfully raised; while in Iowa, Illinois, Indiana and Ohio, the apple trees have mostly been killed by the cold winters. Situated as we are between the two, fruit raising cannot help being profitable. The mineral resources are being developed in this and adjoining counties. When fully developed this industry will give us a home market for all our surplus fruit. Lands adapted to fruits and vegetables can be had along the railroad line at a nominal figure. Parties wishing to engage in fruit culture, should visit this section, and see for themselves.

ESSENTIALS OF A PERFECT GRAPE.

BY W. J. GREEN.

What would we consider a perfect grape? What are the essential requisites? These:

1. A large amount and the proper proportions of sugar and acid.
2. A good flavor.
3. A tender, melting flesh.
4. Large and compact clusters.
5. Large berries, firmly adherent.
6. Few and small seeds.
7. A thin skin.
8. A fruitful, vigorous vine.
9. Good keeping qualities.
10. Longevity.

Perhaps a fuller account of these requisites will bring more clearly before us, "the perfect grape" for which we are looking.

1. Should there be but a minimum amount of sugar and acid the grape would be insipid. The Concord and the Salem possess this defect to some extent. Should there be a large amount of acid, and little sugar, the grape would be sour. The Hartford Prolific is an example. Too much sugar for the amount of acid, or rather too little acid for the sugar, is a fault of many of our grapes—the Delaware for example; but it is not a very objectionable feature. The Catawba is a good example of a grape with about the proper portions of sugar and acid in a moderately large amount.

2. A grape that does not possess an agreeable flavor is of little value for eating fresh, though perhaps of some value in the kitchen, where the flavor may be supplied artificially. The flavor is an element aside from the taste given by the sugar and acid. We speak of the grape as having a musky, or vinous flavor, or aromatic, or foxy flavor, or perhaps of an agreeable, or a delicious flavor, each of which is independent of the sugar and acid. Some grapes possess a fine perfume, also, which is a desirable quality, and should be mentioned in connection with the flavor, although it may not bear any direct relation to the latter.

3. The flesh should be tender, melting in the mouth. Goethe, Salem, Witt, and Allen's Hybrid may be cited as possessing this quality, while Hartford Prolific and Venango are examples of a tough flesh. The nearer the flesh approaches a liquid condition the better. Freedom from pulp, as the Herbemont and Adriondac, is desirable.

4. Too small bunches is a fault possessed by several excellent grapes, notably the Delaware. A large bunch, like that of the Niagara, or the Wilder, or the Agawam, or the Empire State, is a desirable quality. The bunches should also be compact, like those of the Delaware, Clinton, Ives, etc. One objection to the Catawba is the looseness of its bunches.

5. The berries should be large, uniform in size and firmly adherent to the stem. The most prominent of the defects of the Northern Muscadine is the falling of the berries as soon as ripe. The persistence with which the berries cling to the stem is one of the desirable features of the Catawba, the Niagara and the Empire State. Large berries like the Catawba, Niagara, and Rogers' seedlings—as Wilder, Goethe, etc.—should obtain. The small size of the berries is alone sufficient to exclude the Delaware from the list of perfect grapes. The color might properly be mentioned in this connection. Whether it is black, red or white is perhaps of little moment; but the color should be clear and bright. All dull colors are objectionable. The presence of bloom is also desirable, especially on the dark grapes. It adds to the value of the Concord and Adriondac.

6. As we do not depend upon the seeds for reproduction of the grape, the fewer and smaller the seeds the better. Of course we must depend upon seeds for the improvement we are to make; but when the "perfect grape" is once secured, there will be no further need of seeds.

7. The skin of the berry should be thin, making but a small part of the grape. But it should be sufficiently tough to prevent breaking in ordinary handling. A tough skin is especially necessary for marketing, but for home use the more tender the skin, within certain limits, the better. A tough skin is also sometimes desirable in order to better resist the depredations of insects, supposed to injure some varieties. Among the varieties possessing too thick a skin are the Lydia and the Isabella.

8. Although a grape possess all the other requisites and not be fruitful and vigorous, it could not, I think, be pronounced a perfect grape. No one will devote much time to a vine that returns but a few clusters a year for his pains. A shy bearer cannot be an ideal grape. Vigor of vine includes not only good growth, but hardiness and freedom from mildew and other disease, liable to attack poor growers. The "robust health and rugged hardiness, productiveness and general adaptability to all soils," of the Concord have long been important factors in popularizing this variety; the same must be said of any grape to be of the first importance. The Empire State and perhaps the Pocklington, of the new grapes, possess these features. The Jefferson and Isabella are sufficiently productive, but are not hardy enough for this latitude. Evenness of ripening is a point to be observed in connection with the fruitfulness. The berries upon a bunch should all ripen at the same time. The variableness in time of ripening is a great defect of the Diana. Freedom from rot is another important factor in the series of qualities of "the perfect grape." The Vergennes, a good grape in many respects, is subject to rot in some localities. The popularity of the Niagara may in the future be diminished by its being subject to rot and mildew in some sections.

9. Good keeping qualities may not be regarded by some as essential to the best grape; yet we cannot say that we have attained perfection in the grape, until with the other qualities, we have a good keeper. Some varieties perish almost as soon as ripe, while there are others that may be kept the year through. A grape that will retain its freshness and flavor for a long season, is a valuable one, though it may not be of prime quality to begin; but good keeping qualities coupled with all the other requisites will certainly be an acquisition.

10. And lastly, but perhaps not least, the vine should be long lived. It should not be necessary to renew the vineyard every five, ten or twenty years, but the vine should live indefinitely, possessing vigor throughout its whole life.

When we have produced a grape possessing all these qualities, it will, I think, have "the essential requisites of a perfect grape." Perhaps when the ideal here figured shall be attained, other qualities will be found desirable. In fact the standard of perfection in the grape, as in all products of human labor, is constantly advancing. Each progressive step points to yet higher, better, nobler things still to be achieved.

[From Proceedings of the Columbus, Ohio, Horticultural Society.—Ed. G. M.]

EDITORIAL NOTES.

The Codlin Moth.—Though most of our readers know about the Codlin moth, and how to decrease the number by cleaning off the loose bark, wrapping hay bands around the trunk, and by other watchful maneuvers, the annexed from the *Gardeners' Chronicle*, varies the theme somewhat, and we think, instructively to our readers:

"The eggs of this moth are deposited singly on the apex of the ovary when the apple is in flower, or on the crown of the fruit later in the season; the caterpillar is hatched in a few days, and eats its way to the central portion of the ovary, and at first does not attack the covering which immediately protects the young seed. It prolongs its burrow until the rind of the fruit is pierced, forming a tortuous gallery by which air is admitted and excreta discharged. The caterpillar now returns to the core of the fruit, pierces the covering, and obtains access to the seed, upon which it feeds until the apple falls, when it ascends the tree and enters the chrysalis state, which in the earlier part of the season is of short duration, the moth emerging to deposit its eggs as already described. The numbers of this destructive pest of the apple tree, may be lessened considerably by stripping or cutting off all loose bark on the stem and older limbs, and all moss or lichen should be scraped off, so as to afford the least possible shelter for the caterpillar after it leaves the fruit, and expose it for a longer time to the attacks of birds. The best period to destroy the insect is during the caterpillar stage, when advantage should be taken of its habit of climbing the stems of the trees. Bands of stout paper 5 inches wide are attached to the stem in such a way that the upper margin fits tightly all round, whilst the lower margin is sufficiently loose to allow the caterpillar to creep beneath it without difficulty. The insect readily takes possession of the shelter afforded by the band, and, constructing a light web, passes into its dormant state. The bands should be examined once a week, and the caterpillars destroyed. All fallen fruit should be promptly collected, and destroyed before the caterpillars have time to creep out."

Strawberry Supports.—In order to keep strawberries from the earth, amateurs in Europe, who do not mind a little trouble to get a good thing, use wire supports. They are circular wires about a foot over, supported on three legs, which have a kink in them to prevent too deep penetration of the earth. The leaves and flower stems are drawn through the circle, and thus the fruit is supported when mature.

The Stanton Plum.—This is a purple-blue variety, rather above medium size, and as we judge by a plate in the *Horticultural Art Journal*, is a very abundant bearer. It is introduced by Hammond & Willard, of Geneva, N. Y., and this is all in its favor, for if anyone knows what a good plum is, it is they.

Progress Grape.—This is an early red variety, originated, it is said, in Norfolk county, Massachusetts, but brought into notice chiefly in Georgia, where it seems to have a good reputation.

Black Rot in Grapes.—The following abstract of Mr. Scribner's excellent paper on the grape rot, is from the New York *Independent :*

"The disease known as the black rot in grapes, has been determined to be the result of the attack of a small fungus, allied to that which produces the knot in the branches of the plum. Mr. Scribner refers to it as Physalaphora Bidwellii. The disease was first noted as being particularly destructive in Southern Ohio in 1848, and the fungus which produced it, first described by Dr. Engelmann, in the Transactions of the Academy of St. Louis, in 1861. It has spread to all the grape-growing States east of the Mississippi, and is spreading beyond, being destructive now in Kansas. It usually appears when the berries are two-thirds or nearly wholly grown. A livid brown spot appears on one side, eventually covering the berry, the berry finally appearing rotten, though maintaining its normal form. Eventually small black pustules appear from the part first affected, and finally cover the whole surface of the berry. It takes from one to five days to effect these transitions. As soon as the berry exhibits any sign of the malady, the mycelium, under a microscope, may be detected traversing the cells, at frequent points beneath the cuticle some of the threads abruptly terminating in order to form the vesicles designed to contain the spores. These vesicles are of the usual two sexual characters. In the pycnidia or reproductive cysts, the spores are found at the apex of short threads. The spores escape through an opening at the apex of the pycnidia; the spores germinate in water in the space of three or four hours, and these form the plant, as the mycelium might be termed. The spermatia, by analogy perform the duties of pollen, but have been known to germinate and produce filaments of the appearance of mycelial threads. It is suspected that the fungus is only a stage or development of some other fungus at present unknown. Besides this method of reproduction, berries that fall to the ground produce conidioferous filaments, and the conidia produce mycelia as in the other case. The fungus has, in all, four kinds of reproductive bodies. The fungus remains over the winter in the form of mycelium in the berries, or falling in the earth. Persistence in gathering or burning the infested berries, might possibly eradicate the pest, if the parasite does not make its home in the young growing wood as well as in the berries. In some cases, the trimmings of the immature branches are burned also. From whence this great pest to the grape-grower emerged is yet a mystery. Science, however, is getting close on its heels. It has shown what it is, and how immense numbers of its forces may be successfully attacked, and though the whole of the true inwardness of the enemy has not yet been laid bare, the practical grape-grower has cause to be thankful for the work that has been done. Professor Scribner, who has been for the past year studying the diseases of plants under the Department of Agriculture, has furnished most of these interesting facts."

Planting Asparagus.—It is still a mooted question, how wide to set asparagus roots. Three feet each way is the widest, and one foot the least. The former gives large, succulent shoots; the latter, of course, smaller. But one cannot get the same quantity from the wider rows, though the product will bring a higher price. As a medium distance, 18 inches apart may be desirable. Three feet is good where the ground has to be kept clean of weeds by hoe-harrow. We should be glad of somebody's actual experience.

Rhubarb.—To get the best good out of it, rhubarb should be put into very rich soil. It is propagated by splitting up the old crowns, so that a leaf bud is attached to every piece of root. It can also be raised from seeds, but these do not always give us the kinds we want, and it takes several years to get good strong stalks. When well grown, good rhubarb needs no stringing before being cut up for pies.

Horse-radish.—It is still a mooted question, how best to plant horse-radish. Straight clean roots are aimed at. One of the best growers we knew, cut roots to pieces the size of marbles, made a hole with the dibble, and dropped the piece a foot or more below the surface. But the ground was rich, moist and heavy; and in two years the plant was fit for market. The young root pushed up straight to the surface from the bottom, and grew.

Japan Cherry Bean.—M. Vilmorin & Co., of Paris, have introduced the Haricot cerise du Japon as a really good introduction. Though the bean itself resembles somewhat the round white pole bean of our growers, the pods are somewhat necklace-shaped, and the product enormous. We suppose our leading seedsmen will have introduced some of it this year.

SCRAPS AND QUERIES.

Hardy Black Cap Raspberry.—"H. H. C. B.," Eureka, Wis., asks: "Is the Nemaha any hardier than the Gregg raspberry? I lose very much in the latter and I think this winter will not prove an exceptional one. The mercury on this river (Fox, Winnebago county) has dropped to 43° below."

[The Gregg is naturally as hardy as any of its class, but under cultivation, the hardiest kinds get their vital powers ultimately impaired. As a general rule, therefore, the newest introduced kinds will be found the hardiest.—Ed. G. M.]

FORESTRY.

COMMUNICATIONS.

THE COST OF FENCING TIMBER IN PENNSYLVANIA.

BY THOMAS J. EDGE, SEC. PENNA. STATE BOARD OF AGRICULTURE.

From the reports made to the State Board, I arrive at the following conclusions:

That the cost of broad chestnut rails varies from eighteen dollars per hundred in Philadelphia county to three dollars per hundred in Fulton, Greene, and Huntingdon; that the cost of pointing the rails is much less variable than the price, per hundred, and varies from one dollar and seventy-five cents in Indiana and Juniata, to seventy-five cents per hundred in Cambria, Clarion, Fayette, Franklin and Greene.

That the cost of chestnut posts, in the rough, varies from twenty-two dollars per hundred in Philadelphia county, to but four dollars and fifty cents in Sullivan, and four dollars and seventy-five cents in Potter.

That the cost of hewing and mortising posts varies from twelve dollars and seventy-five cents in Juniata, to but four dollars in Bedford, the latter price, however, being manifestly too low to include the board and wages of a good hand at the work.

That locust posts, in the rough, vary in cost from forty dollars in Adams, to fifteen dollars and fifty cents in Cambria.

That the estimated cost, ready to put up, and including materials and labor, of a four-rail post-and-rail fence, varies from one dollar and twenty cents in Philadelphia county, to but thirty-five cents per panel in Fayette.

That the cost of worm fence rails varies from twelve dollars per hundred in Philadelphia, to but two dollars in Fulton—which we think below the actual value or cost.

That the total cost of a five-rail (with rider) worm fence ready put up and including materials is found to vary from seventy-five cents in Philadelphia, to twenty-six cents in Greene.

That the cost of sixteen-foot hemlock fence boards varies from thirty dollars in Adams, to but seven dollars in Clearfield.

That the cost of sixteen-foot pine fence boards varies from thirty-five dollars per thousand in Adams, to but ten dollars in Clarion, a variation of seven dollars per thousand being shown between the pine and hemlock in Lycoming county.

The chestnut posts suitable for a board fence cost seventeen dollars per hundred in Indiana, and but five dollars in Clearfield, Columbia, and Forest, and but four dollars in Crawford.

That locust posts, suitable for the same purpose, cost at the rate of thirty-five dollars in Adams, and but twelve dollars in Clearfield, Dauphin, and Lancaster; much of this difference is, however, due to the difference of opinion which exists as to the size of posts for this purpose. Some of the answers which specified a driven post were excluded from the estimate.

That the cost of a four-rail board fence, including materials and ready to put up, varies from one dollar and forty-five cents in Allegheny, to forty-five cents in Westmoreland.

That the cost of a similar fence with five rails varies from one dollar and sixty cents in Allegheny, to but fifty-five cents in Potter and Westmoreland.

That posts for a wire fence vary in cost from fourteen dollars in Philadelphia, to four dollars in Clearfield and Crawford.

That the estimated cost of putting up a five-wire fence, materials not counted, varies from eight cents per rod in Bradford and Dauphin to thirty cents in Cambria.

From the reports furnished by our reporters, we take the following average of each item of information asked for:

Chestnut rails, (rough,)	$7 00
Pointing rails	1 05
Chestnut posts (rough,)	11 34
Locust posts (rough,)	23 87
Hewing and mortising posts	8 88
Cost of four-rail fence	63
Cost of five-rail fence	69
Rails for worm fence	4 72
Worm fence, per panel	42
Hemlock boards, (16 feet,)	12 79
Pine boards, (16 feet,)	18 25
Chestnut posts, board fence	9 45
Locust posts, board fence	18 00
Four-rail board fence	79
Five-rail board fence	90
Posts for wire fence	9 52
Putting up wire fence, per rod	14
Cost of wire fence per rod	60

In a paper recently read at one of the meetings of the Board, by Eastburn Reeder, member from Bucks county, he estimates the cost of making an ordinary four-rail post fence, (chestnut,) as follows: Post, twelve cents; rails, ten cents each, or forty cents; total cost of material, fifty-two cents; labor of setting, twenty-four cents; total cost per panel of ten feet, seventy-six cents, as against our average over the whole State of sixty-three cents. In this estimate he gives the cost of hewing and mortising posts at eight cents, and pointing at two cents each, or respectively eight dollars and two dollars per hundred, as against our average of seven dollars and one dollar and five cents per hundred.

Mr. Reeder gives the following itemized estimate of the cost of a four-rail board fence per rod:

Forty feet of hemlock boards, at $20 per hundred	80	cents.
Two chestnut posts, at $12 per hundred	24	"
Nails	1	"
Labor	5	"
	$1 10	

In making a comparison between the figures offered by Mr. Reeder and those which represent the average of the State, it should be remembered that his are from a county in which fencing timber and wages are much above the average of the State, and that his figures will be correspondingly above the State average of cost of fencing.

[The above is from a report made to the State Board by its Secretary.—Ed. G. M.]

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EDITORIAL NOTES.

The Cembran Pine.—Though never likely to be popular as a timber tree in America, because of its slow growth, it has a good reputation in the land of its birth for many useful purposes. The largest specimen we have seen in American gardens is about 25 feet high; but we suppose there must be maturer specimens, and we would be glad to know who has a really fine specimen, and how high it is. It is said to reach 100 feet high in the European Alps, at elevations of about 5,000 feet. It extends through Central Europe to Siberia and Kamtchatka. There is a very dwarf form not introduced into our gardens so far as we aware, found in Siberia. It rarely exceeds 4 feet high.

The Cembran Pine is found at higher elevations than even the Larch. The chief carved work of the Swiss is made from this Pine wood, the grateful resinous odor of the wood giving the work an additional charm. A remarkable fact is, the tree when growing in Siberia has no odor to its wood. On account of the agreeable odor, it is a favorite in some parts of Europe for flooring and wainscoting. The nuts are as popular for eating as the Pinon with the Mexican Indians. It is often called the Stone Pine, and the Swiss Stone Pine, though, as in the case of all the Pine family, the same names are often claimed for different things. When young, the tree makes but an inch or two a year. When the plant gets to about 2 or 3 feet high, it will make about 6 inches; and when 4 or 5 feet, the annual growth will be about a foot. It is rare that the annual growth ever exceeds this.

Cembran Pine.

Its value in ornamental gardening can, however, scarcely be over-estimated. There are many places where an evergreen is wanted, that will be satisfied for many years with a limited area. There is nothing equal to it for such situations; and therefore, nurserymen who have a trade with small villa gardens, find it always in demand. It also has the advantage of growing in beauty with years, instead of out of beauty with age, as so many evergreens do. It is a "thing of beauty," which is truly "a joy forever."

The specimen from which we have made our illustration, is about 4 feet high.

Ladies' Silk Culture Association.—It is remarkable that so many enterprises started for the public good, result in a limited amount of usefulness. But the Women's Silk Culture Association is a notable exception. This body of ladies have made silk culture one of the regular industries of our country, and they are still enlarging the area of their good work. It was a good thought of Congress to appropriate them $5,000 last year. The same has been done for them this year, though it was nearly lost. The credit of saving it for them, is due mostly to the thoughtfulness of Mr. Lorin Blodgett, aided by Representative O'Neill.

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NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

ON THE EARLY GROWTH OF THE SPIDERWORTS—TRADESCANTIA.

BY D.

Rattan, in his "Flora of California," mentions the fact that Big-root, Megarrhiza Marah, has its dicotyledonous leaf-stems united so that they form a long tube, at the base of which and within, is found the plumule bud, quite under ground. This device, he says, is to protect the bud from insects which would be likely to destroy it.

The plumule, in order to reach the surface, breaks through the side of the tube of the united petioles, and before it gets to the light, leaves one or two axillary buds beneath the ground, in addition to those at the base of the dicotyledonous leaves; so that it has from two to three or five chances of life, should the terminal and exposed leaves with their buds be destroyed.

Something like this, I find obtains with the well-known creeping Tradescantia, the ordinary stem leaves of which are provided with sheathing or tubular petioles that envelop the stem for a distance of half or three-quarters of an inch above the nodes. The axillary bud, the promise of a future stem, it will be clearly seen, can only grow by piercing the tubular petiole, on account of the tightness with which the latter clings to the stem. This it invariably does.

The earlier nodes of the young branch are furnished with sheaths only, its growing point being quite acute, doubtless for the purpose of more easily making its way through the wall of its tubular cages.

The query naturally comes to one, why this sheathing petiole, and not the ordinary terete, semi-terete or channelled one? Apparently it is not given for the especial well-being of the new stem; but may be provided to strengthen the enclosed internodes against the weight of axillary branches, which shoot forth very quickly after the appearance of each stem leaf.

A ROCKY MOUNTAIN OAK.

BY REV. L. J. TEMPLIN.

There is found growing in this country a species of oak that, from its abundance, if nothing else, will attract attention. It is found growing in dense patches and thickets, in moist places in gulches, ravines, and on parks, hillsides, and mountain slopes, and even on the very tops of many mountain peaks and ridges in this vicinity. In sheltered places this oak sometimes attains a diameter of six inches, and a height of twenty feet. But such specimens generally present all the characteristics of age and decrepitude; being rough, crooked, and gnarled, with dead branches and decayed knot holes. In younger groups, when the trees are 1½ to 3 inches in diameter, and 8 to 12 feet high, they have a very vigorous, thrifty growth. On account of their abundance and the ease with which they are procured, these are frequently used for grape stakes; but the timber, either old or young, is not very durable, especially when compared with the common cedar—Juniperus communis—that abounds on the foothills in all this region.

As we ascend the mountain slopes, this oak becomes more dwarf in habit, till near the exposed summit it becomes a mere shrub, 1 to 3 feet in height. Here it is often found in patches many acres in extent. In the fall, when the frost has first touched these higher altitudes, even while the lower plains and valleys are still clothed in their summer green, these fields of oak shrubbery put on their bright tints of crimson and gold. This gives the slopes and summits of the mountains a very attractive, variegated appearance that may be distinctly seen for a distance of many miles. A stranger is liable to fall into the error of supposing that these patches of bright color are caused by a profusion of late blooming flowers.

Some seasons this oak produces abundant crops of acorns, that are eagerly devoured by deer, elk, bears, hogs, and other animals.

Though so familiar with this tree, I have never studied up its botanical status, so I cannot give the specific name with any certainty, though I suspect it to be Quercus montana.

Canon City, Colorado.

[We have often thought and suggested in these columns, that this oak would be well worthy of the attention of landscape and park gardeners. Some unique effects could be produced from it. Its botanical name is Quercus undulata.—Ed. G. M.]

FURTHER NOTES ON THE PEPINO.

BY GUSTAV EISEN.

In your February number I find several comments upon the Melon shrub or Pepino. As I have already answered most of the remarks, I will confine myself now to only a few points. I enclose the circular on the Pepino which I first sent out, by which you can see that everything quoted by your correspondent G. M. is in fact taken originally from my circular, though several parties have copied the same without indicating the author.

The taste of the fruit varies considerably with the locality, and I must here reiterate that the hotter the place the poorer the taste of the Pepino. What fruits I raised under glass did never come up in flavor and acid to the fruit raised in open ground. In fact, both were decidedly wanting. Without the acid, the fruit is comparatively valueless, as it is this very remarkable acid—remarkable by its property of allaying the thirst—which gives the fruit its great value. In eating the fruit it is necessary first to peel it, as the skin contains a very bitter principle, or perhaps a rather pungent one. As the Pepino ripens in the Central American highlands, where the average temperature during the ripening season is about 72° Fh., it certainly ranks as one of the most valuable fruits of the country, and is so considered by both natives and foreigners. It is, however, not to be expected that the Pepino will prove equally good everywhere, but it will find its choice location just as nearly every other fruit known.

A plant and fruit somewhat analagous to the Pepino as regards climate and other conditions, is the "Curuba," from the highlands of Ecuador and Bogotá. It is a passion vine, bearing a fruit there considered as the finest of all fruits, and it is generally commented upon by all travelers. The seed of this fruit was first introduced by me to Central America, and from there brought to California. The vine is tolerably hardy, having here in Fresno stood uninjured, except as regards the very tender tips, a temperature of 26° Fah., northern exposure. I have great hopes in this fruit for California and the south, and perhaps also as a greenhouse vine. It is entirely distinct from the P. grenadilla and edulis. The scientific name I do not know.

By mail I send you some plants of both the Pepino and Curuba, and hope you will give them a test. The Curuba is most impatient of manure or sour soil, and requires in this respect somewhat to be petted, but the quality of the fruit will repay any care.

Fresno, Cal.

NOTES ON THE WILD FLOWERS OF FLORIDA.

BY M. D.

There are but two climbing plants with unequally pinnate leaves given by Chapman in his order Leguminosæ of the Southern States, namely, Apios tuberosa and Wistaria frutescens. Both of these are found in Northern Florida. According to Chapman, the latter plant has no stipels to its pinnules, whilst Gray notes it as bearing minute ones as well as corresponding stipules to its leaves. A specimen examined by myself, one of many similar ones, possessed stipules perhaps three-sixteenths of an inch in length and stipels half as long. The young stems and leaves were reddish and pubescent.

Sixteen species of Ludwigia are recorded as wildlings of Florida. During the month of April, 1886, the dead stems of seven of these were met

with by myself, in most cases with new leaves appearing at their roots.

In this peninsular State botanizing need not cease with the fall of the leaf in September and October, as, of hundreds of plants, occupants of its dry and wet, open and forest-covered plains, everything remains undisturbed through the winter, excepting perhaps leaves and color.

Here are fruit holders of various kinds with the stems supporting them, the latter frequently decorated with brown or black crisp leaves, all nearly as perfect and readable as during the growing season lately past.

It is really pleasanter to guess at the name of these dried things as you see them where they they grow, and then to confirm or correct your guess by careful analyses on your return to your rooms, than it is to have before you the living specimens to work upon.

The tallest of the American Asters is a Southerner. It is known botanically as Aster Carolinianus, and was first seen by the writer on the copsy borders of the water-works grounds at Jacksonville, Fla. It is a rapid grower, and its stems being weakish, if unsupported by shrubbery or trees, fall in wide curves to the ground. The height attained by the plant, as observed by Chapman, is ten feet. I think, however, it may reach a greater height where vertical or oblique support is furnished it. New shoots seen by me in April had already a length of six feet with perhaps two or three months to grow before the flowers would appear.

Salix Floridana has broad leaves and very noticeable racemes of fertile flowers. I remember no willow showing such conspicuous fruit catkins before the capsules, or pods, have opened to scatter their woolly coated seeds. Would not this tree bear transplanting to Northern parks and shrubberies?

From Chapman I learn that Vitis bipinnata has no tendrils, but Gray says of this species and Vitis indivisa that they have fewer tendrils than the other species growing in the East-Mississippi river region.

All the plants of V. bipinnata seen about Jacksonville and Palatka by myself were well provided with substitutes for hands. One specimen growing over the fence of a neglected garden near the railroad depot at Jacksonville, and opposite one of the large hotels, had tendrils from ten to twelve inches in length, the earliest issuing, I think, from the fourth or fifth node. This specimen was seen on the 5th day of April.

Tradescantia Virginica is a native plant and wild in Florida. I once saw it on the river shore at Arlington, diagonally opposite Jacksonville, but whether it had been cast there with rubbish from a garden near by, or the seed had been brought upon driftwood from some point higher up the river, I, of course, could not well determine. The plant is quite common in the older gardens of the city of Jacksonville.

A shorter species with smaller leaves and flowers, the latter of a bright rose color, is T. rosea, and is credited by Chapman to Georgia and North Carolina. On the 12th of April, 1886, I saw several specimens of T. rosea in flower in an old once cultivated field just outside of Palatka, Fla., south or south-westwardly of the town.

These two species are equally attractive, and I can see no other reason why the Virginian spider-wort should be given garden room and T. rosea excluded, than that the former bears a more conspicuous flower than the latter.

Old Fort San Marco, at Saint Augustine, has outer earth-works faced inwardly with a stone wall. In the dry moat, as it might be termed, between the inner and this outer line of defences of the fort, I found a number of herbaceous plants, one of which was Croton maritimum, a handsome bit of vegetation which is gray or brownish-gray in general color, by reason of a rough and hoary covering of stellate hairs.

In the crevices between the stones forming the backing to the outer embankment of earth a single specimen of Vitis incisa was most unexpectedly come upon.

This vine bears thick and fleshy trifoliate leaves, and is mentioned by Chapman as growing upon the sandy shores of Saint Vincent's Island, West Florida, and westward of that locality.

As the San Marco plant was a very small one, I was careful to remove but a single branch with its leaves, as I hoped some other wandering botanist might be gladdened like myself by a sight of it. When placed in the herbarium the leaves fell apart, a peculiarity, I find, of this and another, somewhat similar species.

EDITORIAL NOTES.

ABIES OR PICEA.—The Fir family of coniferæ, was once the Picea of botanists, and the Spruce was Abies. Modern botanists contend this is an error of earlier botanists, and insist on going back to solid truth on which all science should be founded. Some are now contending in European serials that there is no actual need or even right in this change. In the meantime the poor gardener is puzzled. We may, however, still call Firs and Spruces by their old names, and this is a comfort.

Indian Corn and Phylloxera.—It is reported, and the report fast traveling through American agricultural papers, that if Indian corn be planted near grape-vines infested with Phylloxera, the insects in their fondness for maize, will even leave the grape-vine roots for this superior attraction. Should such a report be unfounded, it will be disastrous as leading grape planters to lean on a broken reed. To our mind, the instinct of preservation of the race, so highly developed in all insects, would not permit it to leave the roots of a perennial plant for these of an annual like Indian corn, but we leave the suggestion to Prof. Riley or other entomologist, who has made the habits of this insect a special study.

Cause of the Fire Blight in the Pear—In an article on "Pear Blight," in the Report of the Botanist to the New York Experimental Station, Prof. Arthur sensitively says:

"There is something remarkable in the slowness with which the essential and fundamental truths upon which the bacterial explanation of pear blight rests, are grasped by this part of the public. This is brought forcibly to mind by an item in the last number that has come to hand of a leading horticultural journal, which says 'the germs of these low orders of vegetation exist everywhere; . . . inoculation of a healthy subject is not demonstration; . . . if any other demonstration has been offered it has not come under notice,' etc. If the leaders among horticulturists can come so far short of appreciating the bearing of the facts which demonstrate that specific bacteria cause pear blight, it cannot be amiss to briefly go over the argument again.

"*Proof that specific bacteria cause pear blight.*—(*a*) Bacteria are found in great abundance in actively blighting tissues, so as to be easily demonstrable to the naked eye, and occur in less abundance in proportion as the disease is less active. (*b*) The disease may be introduced into healthy tissue by inoculation with germs from diseased tissue. (*c*) It is communicated with equal certainty when the germs are separated from all accompanying juices of the diseased tissue by a series of fractional cultures. (*d*) Per contra, it is not communicated by the juices of the disease, after the germs are removed by filtration. (*e*) The germs connected with the disease constitute a single species, which is essential to successful inoculation. (*f*) Per contra, the numerous other species of earth, air and water are not found to a noticeable extent in connection with the disease, and cannot be made to originate it by inoculation, or otherwise."

We give this, as the "leading horticultural journal" referred to, as we always do, as a matter of justice to an interesting subject, on which the true searcher for truth does not care which side has the best of the argument. We would only remark that the extract does not do justice to the views of the Editor. He was among the first to believe that low grades of fungi were at the bottom of fire-blight, and believes so yet. But the belief is founded on analogy chiefly, rather than actual demonstration. It is true that the extremely useful labors of Profs. Burrill and Arthur have brought the facts nearer to a demonstration than they have ever been before; for this they should have full credit.

The point on which we have expressed our desire to be satisfied is this: It is contended that fire-blight is caused by germs of a species of bacterium, which fasten themselves to the bark, and in germinating, penetrate the "pores," as people commonly say, and then destroy the tissue, producing the disease. The proof of this should be to apply the germs from the diseased tissue in like manner to the surface of the bark, and let the spores penetrate of themselves as they would in nature. This has not been done. But the tissue is first injured by a puncture, and the diseased germs applied to the injured tissue. We maintain that this is not a parallel case—is not demonstration; and we do not know that the testy comment on our slowness to grasp a fundamental truth makes the facts any clearer.

New Trees of North America.—Professor Sargent finds three new trees in Florida, but they are of a sub-tropical character, and are no doubt immigrants from a more Northern clime. They are, Myginda integrifolia, an ally of the Buckthorn family; Terminalis Buceras, a Combretacean; and an entirely new genus of palms, named by Wendland, Pseudophœnix Sargentii, which we suppose by its name to have some resemblance or relation to the Date palm.

The Heath for Cut Flowers.—The English are using extensively Erica hyemalis alba for delicate cut-flower work, and find it profitable.

SCRAPS AND QUERIES.

Hybridization in the Almond Family.—Mr. D. B. Wier, of Lacon, Illinois, an intelligent and acute observer is firmly persuaded that peaches, plums and species of the almond family, will occasionally hybridize with each other. He has seen cases of forms that admitted of no other interpretation.

Plantain Leaf for Rhus Poisoning.—Mr. Thomas Bassler says: "That bruised plantain leaves, either Plantago major or Plantago lanceolata, are an excellent antidote against Rhus poison. This reminds us of an expression somewhere in Shakespeare that "plantain leaf is good for broken shins."

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

PUBLIC GARDENS IN WASHINGTON.

BY M. H. LESTER.

Preparations to have everything in good shape at President Cleveland's private place are in progress, but, Oh! Downing, some one has laid out a left-handed approach to the house! Army officers in general, and engineers in particular, are amongst the very best educated people we have, and if not they ought to be. Their education costs the country enough, goodness knows! They can build bridges and monuments, pick up obelisks in Egypt and drop them down in Central Park, or any other place for that matter, but who ever yet saw one that knew anything about a plant or a piece of landscape work? At all events, in the affair above referred to, all laws human and divine, from the laying out of the Garden of Eden until to-day are defied, and it puts one in mind more than anything else in the world of Peter Henderson's "Sarpentine Landscaper," whom he has made so famous.

A great improvement can be noticed in the planting in the public parks in Washington during the past few years, principally in the introduction of more and choicer flowering plants and evergreens. When everything is bare and naked in the winter, a clump of evergreens is very grateful to the eye. In some of the recently planted parks flowering plants often push their blooms through the snow and others follow in rotation, and continue all through spring and early summer, until Hydrangea paniculata grandiflora come.

Some large plants of this on some of the old places here in Georgetown, are glorious when in bloom. A good companion plant is a dwarf Æsculus I saw last summer at the United States Botanic Gardens in bloom in July and August. Mr. Smith, I think, once told me it is peculiar to Texas or Kansas, which probably accounts for it not being oftener seen in collections.

I had a very pleasant walk through the White House conservatories with Mr. Pfister. The amount of cut flowers used there is simply enormous. Great blocks of lily of the valley, tulips, hyacinths, jonquils, narcissus, and other things, "too numerous to mention" are being forced and in every stage of development. Although I knew it by reputation a long time, it is the first time I have seen Freezia refracta alba in bloom. It is a very chaste white flower, and lasts well in a cut state. Primula obconica is also well thought of for cutting. The Amaryllis are as good as they get them anywhere. Mr. Pfister has caught on to a good strain of Primulas, Cyclamens and Cinerarias, the latter with flowers larger than a silver half-dollar. I had to handle the foliage to see the pots, and was surprised—none larger than a six-inch.

I was glad to see Musa coccinia in bloom at the Botanic Gardens, and very beautiful it looks.

Industrial Home, Georgetown, D. C.

EDITORIAL NOTES.

Lovers of Roses.—Referring to page 61, where there is a quotation from an English paper, noting a strange observation of an English clergyman, that in proportion as rose growing increased, the Sunday pews were empty, a Fredericton, New Brunswick, writer says, that if the clergyman would make his discourses as attractive as the gardens of the rose-growers, no doubt the growers would go to church, and take their roses with them. It is a good retort.

Landscape Gardening in Oregon.—Much of the gardening prosperity of a community depends on the intelligence of those who happen to locate professionally in any neighborhood. We note by a Portland paper, that the services of Mr. Geo.

Otten are very highly spoken of, and his residence there is regarded as a great gain to Oregon. It is always pleasant to read such good reports.

THE PROBASCO FOUNTAIN AT CLIFTON, NEAR CINCINNATI.—Every one has seen or read of the magnificent Davidson fountain, given by Mr. Henry Probasco to the people of Cincinnati. One of the neighboring boroughs, Clifton, of which Mr. Probasco is Mayor, is now to receive a similar blessing from the same generous hand. It will bear his name, and be placed in front of the Town Hall. There the fountain will be seen to great advantage, with masses of trees and buildings for its background; besides being freely accessible for all its uses, occupying a beautiful situation in more appropriate surroundings. Beneath the old trees, will be placed around the fountain, granite seats of single blocks for rest and enjoyment of the public, as well as hundreds of school children (always a pleasant sight), right in the centre of their play-ground. With the strong pressure of the abundant supply of water from the jets, falling into spray and trickling over the bronze dome into the large basins below, the effect of these sparkling rivulets, surrounded with gas-lights, or in the flashing sunlight in the noonday, shaded by these old trees planted a generation ago, the effect must be beautiful. The seven immense blocks of Quincy granite now being finished, of which the entire fountain is constructed, are nearly completed; the huge polished basin forms the central mass, 20 feet in circumference, of exquisite proportions in all its lines.

Above this, resting upon a polished, fluted octagonal base, rests the beautiful dome, of exquisite proportions, above which the jets are to play. This, also, is in one immense mass of bronze, modeled in the most artistic manner, covered all over with the leafage of many varieties of waving Water Lilies, from the Egyptian Lotus to our own Pond Lilies, upon which the water will descend slowly into the horse troughs or basins below for dogs and other animals. The effect of this mass of sparkling water upon the summit, designed in so realistic a manner on the curved lines of the bronze dome, is sure to be effective as well as beautiful.

The foundations will be laid next month, so that the whole may be completed and dedicated to the people of Clifton early in the coming spring. In our notice of this gift of the Mayor last August, the village ordinance accepting it fixing the site was named, but as the much better one is now determined, there can be scarcely a doubt of its acceptance.

THE BOTANICAL GARDENS AT WASHINGTON.—A correspondent of the London *Gardening World* who has been traveling through the United States, pays the following compliment to the United States Botanical Garden:

"The Botanical Garden is close by. It is about ten acres in extent, and is well laid out. The main conservatory is 300 ft. long, 60 ft. wide, height of dome, 40 ft., and wings 25 ft. In connection with this are ten other houses, and a lecture and botanical class room for students. The houses contain a very fine collection of plants, such as are generally found suitable for botanical study. There is also a very fine collection of stately Palms, majestic tree Ferns, large specimens of officinal and medicinal plants, a grand collection of succulents, a choice collection of Orchids, &c., all in very fine condition. There is no other place in America where such an unique collection is to be seen. These botanical gardens are constantly receiving importations from various parts of the world. The place is in admirable condition, and is under the able superintendence of Mr. W. R. Smith, who has had charge here since 1852, and who is greatly respected, his kindly genial manner having made for him a host of friends in all parts of the world."

D. LANDRETH & SONS.—In this ever changing land of ours it is always a pleasure to note the persistence of first-class firms in the nursery and seed business. One of the young sons of one of the partners in the famous house of D. Landreth & Sons, who has recently reached manhood, has been taken into the business, which ensures its continuance to the fourth generation since its foundation.

RARE WATER LILIES.—We rarely feel warranted in giving special notice to catalogues, because so many have the same things to sell, and it is not just to give anyone in the trade a lift over another when the advertising columns are free to all; but we are sure all in the trade are glad to encourage the efforts of Mr. E. D. Sturtevant, of Bordentown, New Jersey, to cultivate a taste for hardy aquatics. His beautiful catalogue just issued is just the very thing.

CHARLES DOWNING.—Mr. B. Gott, of Arkona, Ontario, has recently published a biographical notice of the venerable Pomologist who has so recently passed away. He notes his birth on the 9th of July, 1802, and that of the famous landscape gardener, his brother, Andrew Jackson Downing, in 1813. The father was a nurseryman at Newburg, but died before Charles was twenty-one years old; but he at once took hold of the business, and, young as he was, continued it with complete success. When Andrew came of age the style of the firm was made C. and A. J. Downing. A few years later, the latter desiring to devote his whole life to the development of garden art, Charles purchased a property near their old home and established his nursery and experimental grounds alone. Charles was a great admirer of his talented brother, who, at thirty years of age, gave us the *Fruit and Fruit Trees of America*, in 1845; and after his melancholy death in the attempt to save fellow passengers from drowning, took pride in continuing and amplifying the good work his brother began. Mr. Gott quotes Mr. J. J. Thomas in an anecdote showing the different paths of usefulness in the lives of the two men—the one delighting in working to improve the tastes of men and women already possessed of high intelligence, and with the means to develop actual beauty,—the other, plain, patient, plodding, proud to collect facts and information, and glad to let anybody or everybody have the whole value of his work in any way they could. Charles Downing retired from business in 1857–58, and then gave his whole subsequent life to the advancement of pomology. He met with an accident which broke his ribs on October 22, 1882, and died January 18, 1885, in his 83d year.

These facts have been given before in scattered paragraphs; but in this connected and concise form will have a new and fresh interest to all.

HENRY WARD BEECHER.—When the death of one for whom the whole nation mourns is familiar to every reader through the daily press, it seems superfluous to dilate on an event about which the reader already well knows. It is well, however, to make a record in our pages of his death on the 8th of March, in his seventy-fourth year, and that horticulture has not for a long time lost a more earnest devotee than he. His influence on the increase of horticultural taste in our country has also been of the first order, and thousands have been brought through his examples and precepts to have a pleasure in gardening they would not have known had he never lived. His love of flowers was well exemplified by his wishes, faithfully carried out, that the only mourning for him should be in the shape of flowers. A chaplet of flowers, instead of the ordinary black crape, gave the usual door-bell notice that death reigned within the household, and flowers strewed the grave that held his dust. It will be long before humanity gets a brother who will be in such sympathy with its best longings, as Henry Ward Beecher; it will be long before humanity forgets the great debt of obligation it owes to the life of this great man.

WILLIAM CARVILL.—Some of the specimens of landscape gardening in the vicinity of Philadelphia, among the older places, will rank as among the best illustrations of beauty and taste in the art, anywhere in the world. Many of these were laid out by William Carvill, a highly educated English gardener, who came to Philadelphia early in the century. The grounds of Haverford College, where Philadelphia gave the reception to the members of the British Association for the advancement of Science a few years ago, were very much admired by the English visitors. This is one of the best specimens of Mr. Carvill's work which the march of city improvements has left to us. When the celebrated gardens of William Hamilton, the friend and employer of Pursh and Lyon, went from the family to a cemetery company, and which is now known as Woodlands, Mr. Carvill leased the greenhouses, and had a general oversight over the cemetery. It was very fortunate that so intelligent a man had this charge, for to this we are indebted for the preservation of many of the rare trees and shrubs for which the grounds are still famous. He retired from business many years ago, and has been living with a married daughter in Philadelphia, where he died on the 3rd of March in his ninetieth year.

HISTORY OF THE PEAR BLIGHT.—Under this title, Dr. J. C. Arthur gives in the Report of the Botanist to the New York experimental station, a list of all the leading references to pear blight he has been able to find. The first note is by William Denning, 1794. Coxe comes next in 1817. It is often difficult to make out from these essays whether the authors had what we call fire blight in mind or not. Coxe appears to have in his mind what we know as fire blight, so that we may feel pretty certain the disease was very bad before his time. "In twenty years" he had lost by the sudden taking off, "upwards of twenty trees." What we know as "frozen sap blight"—the blackening of leaves, and blackening the bark of one year's old wood, soon after growth commences in spring, though having evidently no relation to frost, but probably to some form of fungus attack, is confounded by most of the old writers and many of the modern, with fire blight, which is a summer disease.

CARNATION CULTURE.—By Leroy L. Lamborn. Published by the author, Alliance, Ohio.

The immense importance of the carnation in a commercial aspect, aside from the general love which people have for its cultivation, makes it well worthy of a special treatise. We may say, therefore, that the work is a very timely one. It is the work of a thoroughly practical cultivator, and claims to be that and nothing more. It has the usual defects of that class of works, but ranks fully with the best of them. We cannot say this much of the style which makes a paragraph of nearly every sentence. It becomes exceedingly difficult to keep the leading thought in view until the author has done with it,—or indeed to know when he has done with it, and is introducing another one.

We may here say that one of the great defects of modern writing is, a surprising ignorance of the principles of punctuation. While we are now reflecting on profuse paragraphing, we cannot but remember the numbers of instances that come before us of distinct paragraphs jumbled into one.

Drugs and Medicines of North America.—This excellent quarterly, published by the Lloyds of Cincinnati, comes to us this time with a study of Lobelia. Everything relating to the genus is fully elaborated, both in its botanical history and medical properties.

Catalogues.—Anderson, H. S., Descriptive Price List, Union Springs, N. Y.; Bailey, Banks & Biddle, The Connoisseur for March, 1887, Philadelphia; Berckmans, P. J., Greenhouse, Bedding and New Plants, Augusta, Ga.; Bruce, John A., & Co., Vegetable, Agricultural and Flower Seeds, Hamilton, Ont., Can.; Bullard, E. M., Reliable Seeds and Plants, also High Class Poultry, West Swanzey, N. H.; Butterton, John, Japanese Maples, etc., Hammonton, N. J.; Butz, Paul & Son, Seed Annual, also Wholesale List, New Castle, Pa.; Collins, John S., Wholesale Price List, Moorestown, N. J.; Conover Bros., Special Trade Price List, Little Silver, N. J.; Cotta, H. R., Fruits, Evergreens and Shade Trees, Freeport, Ill.; Ellwanger & Barry, Good New Things, Rochester, N. Y.; Everitt, J. A., & Co., O. K. Seeds, Indianapolis, Ind.; Hubbard, T. S., Wholesale Grape Vines, Small Fruits, etc., Fredonia, N. Y.; Jackson, Thomas, Annual Wholesale Catalogue, Portland, Maine; Josselyn, George S., American Grape Vines, Small Fruits etc., Fredonia, N. Y.; Lamb, James M., Ornamental Plants, Fayetteville, N. C.; Manning, J. W., Fruit, Ornamental and Evergreen Trees and Hardy Shrubs, Reading, Mass.; Mendenhall Greenhouses, Roses, Plants, Bulbs, etc., Minneapolis, Minn.; Nickels, Anna B., Cactus and Native Texas and Mexican Plants, Laredo, Texas; Parry, William, Fruits, Small Fruits and Seeds, Parry, N. J.; Rathbone, W. W., Sweet Potato Seed Price List, Marietta, Ohio; Rawson, W. W., & Co., List of Novelties, Boston, Mass; Roesch, Lewis, Grape Vines, Small Fruits, etc., Fredonia, N. Y.; Thorburn, James M., & Co., Gladiolus and other Spring Bulbs, New York City; Wiley & Co., Fruits, Small Fruits, Flowers and Vegetables, Cayuga, N. Y.; Williams, A., Roses and Flowering Plants, Sharon, Pa.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

Pennsylvania Horticultural Society.—The Bulb Show of this Society, which was held on the 15th of March in the Committee rooms of the Society's Hall on Broad street, resulted in some magnificent exhibits by a few amateurs and florists. The General Union of Holland, under the patronage of the King of the Netherlands, offered gold, silver gilt, and silver medals, for Hyacinths, Tulips, and Polyanthus Narcissus. The Hyacinths were to be 50, of not less than 25 varieties; single Tulips, 25 pots of 25 sorts; Polyanthus Narcissus, 20 pots of 10 sorts.

The Horticultural Society offered premiums for smaller lots of 12 and 6, for Lilies, Azaleas, Lily of the Valley, and cut specimens, 6 each, of 11 kinds of roses in popular use for cut-flowers by dealers.

The competition was weak, but the plants of Hyacinths and flowers of cut roses, were extremely fine. The competition was, however, livelier than last year, and the great interest shown by the public in the beautiful display will encourage the Society to push on to greater efforts in the future. The gold medal was carried off by Mr. John Shaw, gardener to Clarence H. Clark, Esq. These were very beautiful plants. The bulbs showed no disposition to sprout and make offsets, the leaves were broad and stiff, recurving only at the edges, and pushing out straight from the centre of the bulb. The flowers were on stout stalks, mostly self-supporting, and the heads of flowers were carried up well above the foliage.

The flowers were all dense on the spike, and mostly of an uniform cylindrical outline of from 7 or 8 inches long by 3 inches in diameter. It was really a first class prize set. The silver gilt medal was awarded to Mr. Eisele, florist, and the silver to Mr. John M. Hughes, gardener to George W. Childs, Esq., both excellent collections, but defective in some plants in those properties noted as excellencies in the gold medal set.

It is remarkable that the smaller collections which usually contain finer specimens of culture, as having more competitors from a wider circle, were not on this occasion equal to the gold medal set. Indeed many of the small collections were contributed by the same parties who had already entered for the larger ones, and of course their best plants went where the heaviest honors were likely to fall. Craig Brothers ought to have had a special premium for their instructive labeling. The names were on small white cards across the top of slender stakes, so that anyone could read them a long distance away. The others were on ordinary small labels and behind the plants where even persevering explorations by blind hand among the leaves and pots failed to expose them.

Mr. John M. Hughes, was the only competitor for the silver gilt medal, offered for 25 early single Tulips. There were about five or six bulbs in 6-inch pots, on an average 8 inches high, and held the flowers up well above the leaves, mostly without artificial support. An interesting fact not noticed before by the reporter of the Gardeners' Monthly, was, that one variety, Rembrandt, did not close, as other Tulips do with the slightest shade, but had the petals wholly horizontal. The flower was rotate instead of cup-shaped, as in most Tulips. The upper portion of the petals are deep scarlet, while the base of the petals have large orange spots.

Mr. Hughes also earned the silver gilt medal for 20 Polyanthus Narcissus. The plants were however not wholly of this class. The collection was made up of the Poet's Narciss, Rush Daffodils and others besides the Polyanthus.

Among the miscellaneous bulbs, some Lachenalias from Mr. John M. Hughes, gardener to Geo. W. Childs, Esq., were very much admired. L. quadricolor, besides its dwarf spikes and pretty flowers, has spotted leaves like our wild dog's tooth violet, but the great attraction was a hanging basket of galvanized wire, about 18 inches across, from which the plants pushed in every direction. There were over 50 spikes of flowers from the plants.

Mr. Hughes also had a nice collection of Chinese Primroses. There were doubles and singles among them, and many shades between white and deep crimson. The plants were in four-inch pots, and had an average of six leaves, and seventy-five expanded flowers on each plant.

Only three single plants of azaleas were in competition. The first premium was given to the plant exhibited by Pennock Bros. It was the dark red known as King of Holland. It was on a single stem, with a head about 2½ feet over, and had about 400 expanded flowers on it.

H. A. Dreer made a small exhibit, consisting of two small plants of Odontoglossum, one Oncidium, one Dendrobium white, and a great number of the rarer Cypripediums, which were particularly attractive.

The roses attracted many admirers. Possibly Papa Gontier drew most worshippers. The first impression is that they are huge Bon Silene, but the latter is of course a Tea Rose. These came from Mr. John Henderson. American Beauty in several collections was scarcely less charming, its great size and bright color being superlative among the popular sorts. Lonsdale & Burton's flowers of this measured six inches across. They also had first premium for 6 Mermets, which flowers, though from a nearly globular rose, had petals nearly 3 inches long. Some Bride's, from Mr. John May, had its rosy tinted lemon-white flowers with petals about 2½ inches long. The Puritan, a pure white hybrid from Mr. Evans, was not much inferior to American Beauty in size, and was very much admired. The Bennett's, also from Mr. Evans, showed what it could do in good hands. The petals were about 3½ inches long, and quite equal to General Jacqueminot in the dazzling tint to the purple, like bloom on a plum, which gives such an unique character to that good old rose. The Niphetos buds of Messrs. Craig, old as the variety is, can scarcely be beaten by any of its class. These were nearly 3 inches long. Marquis Vivens, and Madame Cuisin, by the same growers, found admirers for their pretty mixtures of rose and white, but we suppose will not reach the popularity achieved by some of their sisters. The La France of Mr. Evans was particularly large and fine, and retains its great popularity as well for its delightful odor as for its delicate pink color and good form. The beautiful globular yellow Perle des Jardins and the more bronzy yellow Sunsets were among those which are as yet unmatchable in their styles.

There was exhibited by Mr. Banyard a new carnation called Quaker City—white and apparently floriferous; and from Mr. Stewart of Wilmington, Delaware, came a dwarf Sweet Alyssum, much more double than the common one. We have not undertaken to give an account of all the exhibitors or their meritorious productions, but simply sketched, for the benefit of our distant readers, such superior points in the articles exhibited as may give them some idea of their character. Our space does not permit more. In the smaller collections Mr. W. K. Harris, in addition to names already given, was a successful competitor.

Pennsylvania State Horticultural Association, for 1886.—From E. B. Engle, Waynesboro, Pa., Secretary.

We doubt whether any more truly valuable report comes to our table than this; as most of those who give the addresses and take part in the discussions are men of a high degree of intelligence, coupled with a practical experience rarely combined. An excellent rule for some years has been to give colored lithographs of such Pennsylvania seedling fruits and flowers that seem to have a permanent value. We have here McFarland's late yellow, said to be a seedling of late Crawford, but much larger than that well-known and popular variety; Cumberland apple, raised by David Miller, of Cumberland county, a September apple of medium size, great beauty, and good eating quality,—in plain lithograph—and a colored plate of the Triumph Gooseberry, "a seedling of Houghton, Catawissa, Pa., on the grounds of F. F. Merceron."

In regard to these we would suggest to the excellent Secretary, the importance of distinguishing between the thing which is, and that which may be. As we understand, McFarland's peach is a chance seedling, and though it is probable from its appearance that it is a seedling from Crawford, we do not think this justifies the statement that it actually is. The danger of this is shown in the case of the gooseberry. We have had the positive statement from one who should know, that the Triumph gooseberry was found in a garden, "supposed to be" a seedling, and that its exact origin is unknown. Yet we have it here without any qualification, as a "seedling of Houghton." The Houghton belongs to the species of America, Ribes rotundifolia, while an examination of specimens of this submitted to us, shows that it is a seedling of another species, Ribes grossularia, of Europe.

When we pointed this out to the parties in interest at the time, we were only met by the response, "How could seed of the English gooseberry get there?" Because we were unable to answer that question, it does not follow that it is "a seedling of Houghton."

It is a very good gooseberry, well worth extensive planting,—fully equal, we think, to the Industry, which is also of the English race,—but it is not a seedling of the Houghton, and it should not have been so stated in a standard work like this.

New York Horticultural Society.—The April meeting will be held on the 26th, 27th and 28th. There is a wide list of exhibits called for, though roses and orchids have the posts of honor. Mr. John Thorpe, of Queens, Long Island, is Secretary, from whom further information may be obtained.

Germantown (Philada.) Horticultural Society.—The March meeting of this local Society was particularly interesting from the numerous orchids and rare plants on exhibition, one of which, Ruellia macrantha, shown by Mr. James Barrows, was particularly attractive. The natural order Acanthaceæ furnishes a large list of beautiful winter blooming plants—but few are more charming than this. The numerous large, rosy flowers give the impression of a shrubby gloxinia. Mr. Thomas Meehan gave his usual off-hand address on the peculiarities of the plants, fruits and flowers on exhibition, and the practical lessons derived from them. The hall was crowded with visitors, among whom were numbers of the leading ladies and gentlemen of Germantown, and, as the managers say, "there was standing room only" for those who came late. Benjamin H. Shoemaker, Esq., President, presided, to whom much credit is due for the prosperous career of the Society. To the able financial management of Mr. Joseph Meehan, the Treasurer, credit is also due. When he took hold the Society was in debt, and the whole of one year's premiums to the exhibitors had to be given up to keep it from utter bankruptcy. Now the much larger list of premiums are promptly paid, and the Society has a large sum to its credit as a contingent fund.

State Agricultural Officers in Pennsylvania.—At the annual meeting of the State Board of Agriculture of Pennsylvania, Mr. Thomas Meehan was re-elected State Botanist; and Mr. Edwin Satterthwaite, State Pomologist; Mr. Joseph Willcox, Mineralogist; Prof. Lesley, Geologist; Dr. Warren, Ornithologist; and Prof. Buckhout, Entomologist. Dr. Leffman was also re-elected State Microscopist.

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

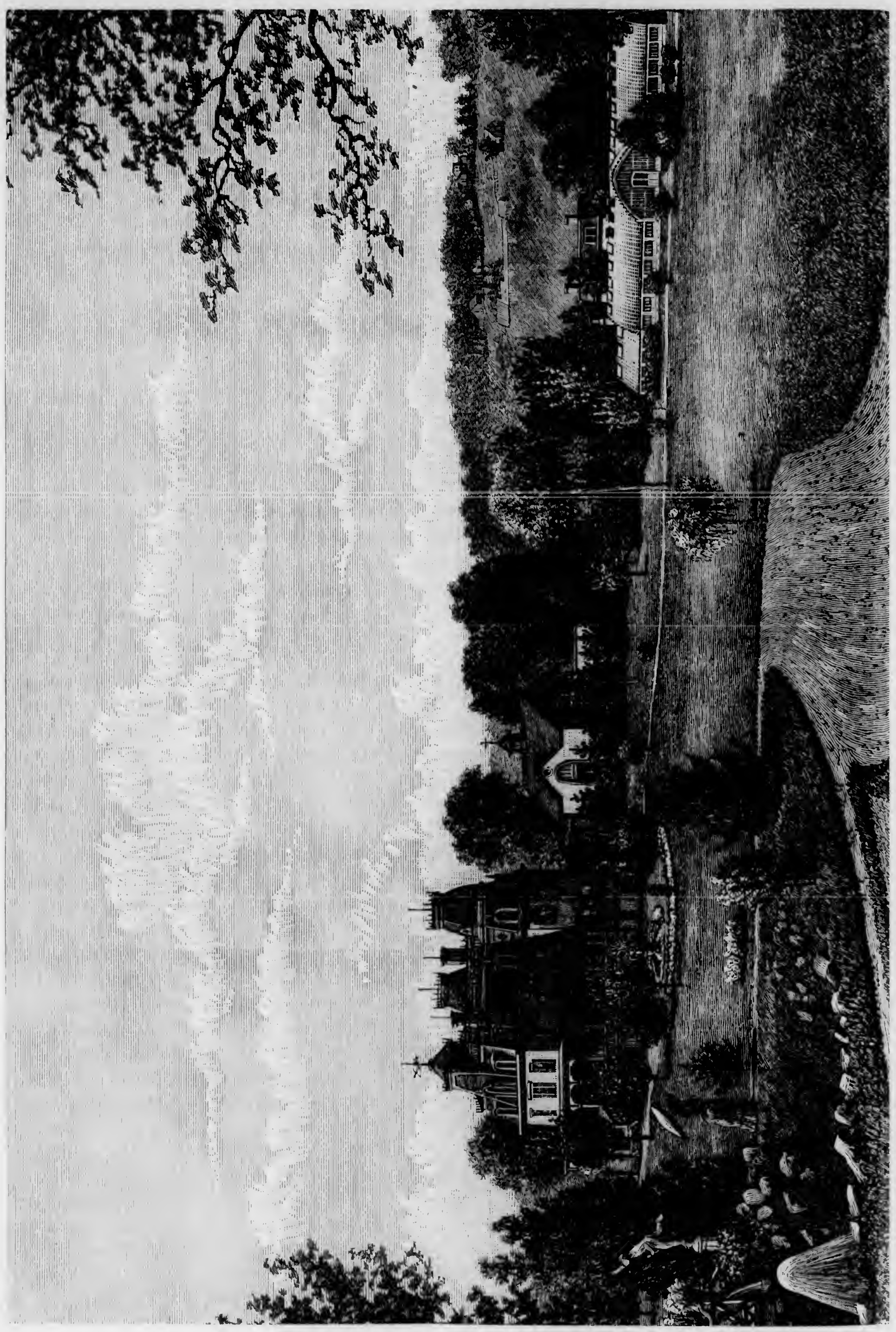
Volume XXIX. MAY, 1887. Number 341.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

One of the prettiest pieces of true art in landscape gardening near Philadelphia is Hunting Park, designed about a quarter of a century ago by Mr. William Saunders, now of Washington. Having a wholly flat piece of ground to deal with, in that respect he was at once cut off from a great source of variety which is one of the chief elements of success in landscape gardening. He had to depend wholly on the selection of striking differences in the trees individually, and in varying the character of the groups themselves. No attention has been given to this little park of about twenty-five acres. The trees are starving in many instances, for lack of manure,—some have plead for a thinning out of quarrelsome neighbors that have almost overpowered them,—while in many places, trees that have died have not been replaced, and hence much of the original design is impaired. But, neglected as it has been, it is an excellent illustration of how much may be done to give variety to a place by trees alone, when in the hands of a master in the art. On a flat piece of ground like this, one is almost compelled to look to trees for the material out of which to give the varied features which constitute no mean element in successful landscape gardening.

It is amazing when one looks around at what are passed as good specimens of landscape work, to note how little regard is given to this trait in good gardening. There are indeed few places known to the writer, that might not be given a wonderfully greater interest by attention to more variety in detail, and which could be easily given without adding much to the cost, and often with a decreased expense in the annual bills for maintaining such grounds. In places of any extent what is known as the wild garden has been introduced in many cases with just this result. It has added a variety that costs little to keep. Where there is a natural inequality in the surface we have a ready means of giving variety, as it affords opportunities for introducing rock gardens, fern gardens, fountains, pools, rustic bridges, statuary, and other special features, to much better advantage than where the ground is quite level. We give here a view from the grounds of "Rocky Dell Farm," the residence of J. Reynal, Esq., at White Plains, N. Y. Beautiful as these grounds are, the critical landscape artist could no doubt improve on some of the features; still occasion has been taken to bring into play many of the advantages noted which variety gives. We call attention to the matter at this season, because so many elements out of which



"Rocky Dell Farm"—Residence of J. Reynal, Esq., White Plains, N. Y.

so much in variety may be afforded, press themselves on the attention with much greater force than at other seasons of the year.

In the past we have suggested that peculiar effects could be obtained by taking a few species and making an essential feature of them by successful growth for spring adornment. So also, much may be done for summer effect outside of mere leaf and bedding plants. Why are not the class of succulents used more for bedding purposes? We do not mean that they should supplant flowering things, of course. Succulents generally have no blooms adapted to cutting. Usually, in fact, they are very shy of blossoming; but they afford much varied form, and many of them have strikingly gay colors. They grow so well in our climate—asking no care—giving really so much in return for so little, that certainly we should make more use of them than we do. For vases, rock work, etc., they are almost indispensable. Amongst sedums, opuntias, and mammillaria, are some quite hardy species—so that, winter or summer, they are self-supporting contributors to our floral pleasures.

Then again, the dwarf evergreens are not made as much use of as they might be; chiefly, because we employ them too sparingly. It is usual to plant them mainly for their botanical interest. We find persons pride themselves on having this or that rare thing in their "collection," just as the numismatist values his old coins; not for the use he can make of the rare penny, but because so few possess one. The real value of these plants is their capacity for adornment, and this is seldom brought out, unless they are used in groups or masses. It may be said that they are frequently too expensive to be used on a large scale; but it is the limited demand for them which keeps up the price. If one has not the means to buy them by the dozen at once, they may be increased on one's own ground. Almost all these dwarf evergreens root very readily by layers. A slit may be made in their stems near the ground, in June, and good rich earth mounded up about them, and generally they will be rooted by the next season. Some may be increased by inarching. Common kinds may be set against the rare ones. A little bark cut away from the stock, and from the kind to be inarched, and then the two cut places brought face to face together and tied with bark, woolen string, or any thing of that character, and they will be firmly united together before fall. Or they may be grafted on other things growing at a distance, by burying a small bottle till the mouth is level with the ground, at the base of a little plant to be grafted; fill it with water, then put a branch of the choice kind in the bottle, and tie together as in inarching, which it really is.

In planting out flowers don't take them at once from the hot-house to the open ground; set the pots out for a few days in a cold frame with plenty of air, or under a tree in a sheltered place. Before turning them out of pots, water; and when set in the earth, press the soil very hard about the flower roots. If the ground be dry, the earth cannot be pressed too hard.

Don't make the beds very high, or the rains in summer will run off too rapidly. After smoothing the surface peg down the plants as much as possible so as to cover the surface soon. The plants also push out side shoots easier. Where small twigs can be had, split and double them like hair pins, for pegging down; where these are not at hand, small pieces of bast mat or twine, doubled and dibbled in the earth by the ends, make very fine pegs.

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COMMUNICATIONS.

SUMMER ANNUALS.

BY ALBERT M. HERR.

There seems to be a growing interest in this deserving and really beautiful class of plants. The fact that annuals, as the name signifies, grow, bloom, and die the first year, is against them in the estimation of some people; but considering how few there are who can keep plants over winter, in a healthy condition, it should be in their favor. They are easily grown, or cheaply procured, and can be used with quite as much effect as more costly plants, thus placing them within the reach of everybody. It is also with a feeling of relief that we turn from the highly improved and carefully selected varieties of many of our green and hot-house plants, to the pure and simple handiwork of nature, which we find among our annuals; and when we come upon a clump of these in a situation adapted to their wants, it is with an entirely different feeling of pleasure that we admire them, from that which we have in admiring a carefully arranged and planted bed of our bedding plants. They carry one's thoughts to their natural habitats, the woods, meadows, and hill-sides.

Not that I would depreciate the fine and beautiful varieties of bedding plants, but it should be remembered that we can greatly add to the beauty of our lawns and flower gardens without much ad-

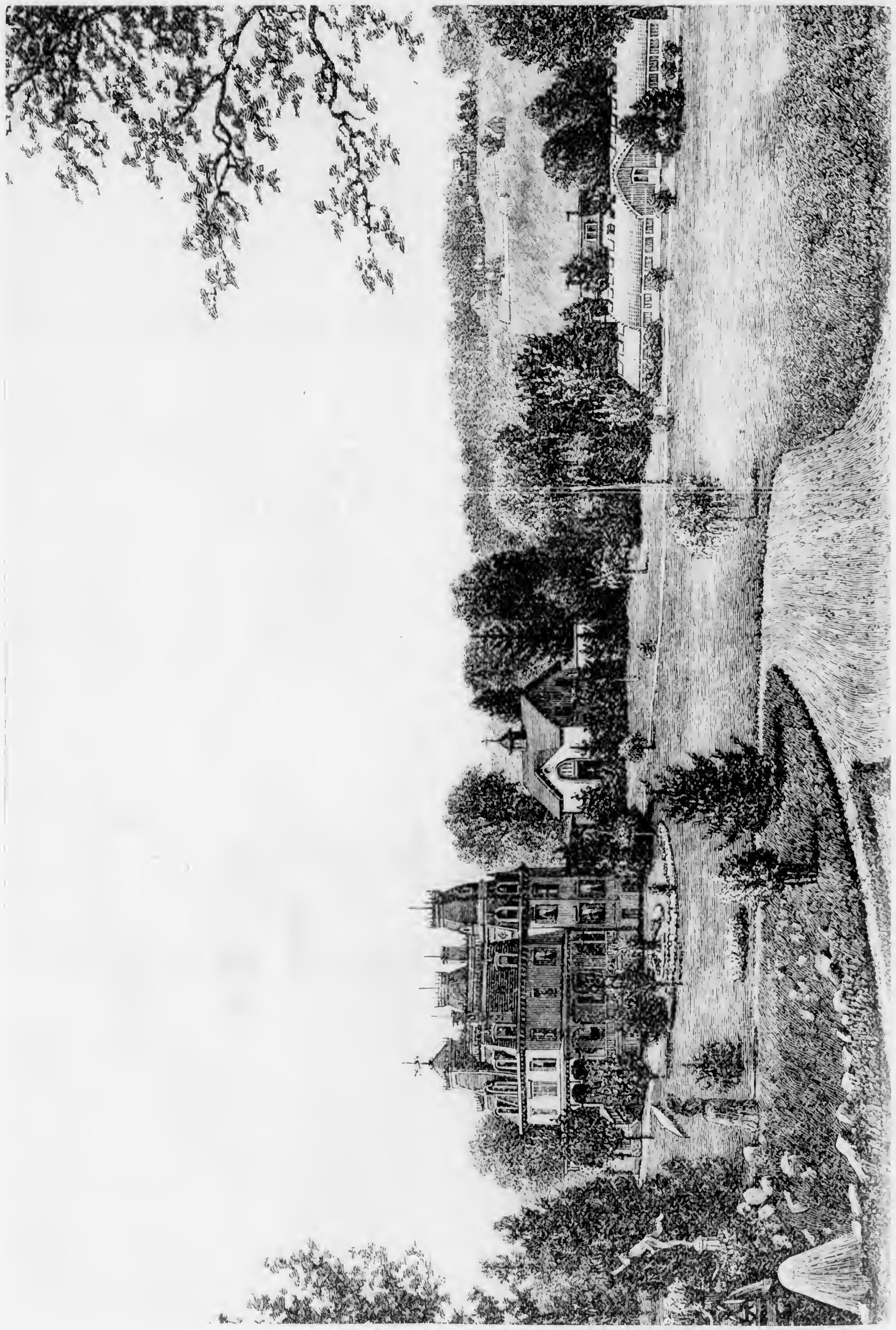

Fig. [illegible] "Rocky Dell Farm"—Residence of J. Reynal, Esq., White Plains, N. Y.

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INTENTIONAL SECOND EXPOSURE

ditional expense, by using a few of the many varieties of annuals.

There has, as we all know, been great improvement by hybridization and selection, in many of the annuals also, as the Phlox, Petunia, Aster, etc., making them valuable for bedding purposes where a mass of color is desired.

Many fail to secure good results by making the mistake of sowing the seed where they are to bloom, and then leaving them stand too close, causing a weak and spindling growth, with correspondingly poor flowers, for they like room to develop as well as plants that are larger when planted out; and will repay tenfold, later in the season, the bareness of the bed when first planted. Phlox should have six to eight inches of room, while Petunia should have from ten to twelve, and so on in proportion to their size and vigor of growth. Such varieties as Phlox, China Pink, Gaillardia, and others, will bloom much better if not allowed to bear much seed; their general appearance will also be greatly improved by the cutting of old and faded blossoms occasionally.

Abronia, Aster, Balsam, Summer Chrysanthemum, Dianthus, or China Pink, Gaillardia, Nemophila, Petunia, Phlox, Whitlavia, and Zinnia make a suitable list to try. and you will soon add a number more to your collection. *Lancaster, Pa.*

A LOOK WITH PAUL OVER HIS NEW ROSES.

BY E. Y. TEAS.

I note what you say in April number about two new English roses. I saw these on the grounds of the originators, Wm. Paul & Son, Waltham Cross, near London, last August, and am confident they are varieties of character and value.

Grand Mogul is undoubtedly the darkest good rose ever produced,—of the darkest velvety texture, nearly black, of large size, good form, and the plant grows vigorously.

Silver Queen somewhat resembles La France, but is lighter in color and a stronger grower.

I believe these roses have not yet been offered for sale. I have rarely, if ever, more thoroughly enjoyed a few hours' run through a collection of ornamental nursery stock, so much as I did through Wm. Paul & Son's grounds, with Wm. Paul as companion. I have not seen elsewhere as fine collection of rare and beautiful ornamentals, or in better condition, than here, or a more thoroughly companionable man to show them than the venerable head of this old establishment.

Dunreith, Ind., April 4, 1887.

GARDENING IN DELAWARE CO., PA.

BY A VISITOR.

Gardening does not attract popular attention in America as it would do if people would only report on the good things they see. The author of this, happening in the neighborhood of Media, with the aid of a guide, made a hurried call on Mr. Henry Patterson, gardener to Mrs. G. W. Farnum, at East Media. He is one of the good-natured gardeners of the old school, and has been with the Farnum family for twenty years.

This is one of the most quiet and retired gardens I ever saw in this country. It is also very extensive. There are 14 acres of lawn. The place is surrounded with a dense forest of different kinds of trees, some of which are of large dimensions. There are some fine specimens of hemlocks, Scotch and Austrian pines, growing on different parts of the lawn; also a choice collection of different varieties of shrubbery,—several groups of rhododendrons of improved hybrids, which show well for flowers this season,—two or three large oval beds of a variety of hardy azaleas, which Mr. P. informed me bloomed exceedingly well last year, and were admired by all who saw them. There is also a fine kitchen and fruit garden, just an acre in extent, laid out in a square, with gravel walks and box edging,—substantial frames for forcing early vegetables,—all surrounded with one of the finest Arbor Vitæ hedges I have seen for many a day. The chief reason for this is, there are no trees that interfere or retard its growth. The hedge is about 5 feet through at the bottom, and is kept clipped in, like the ridge of a house,—at an angle of about 45°, and looks very nice.

In addition to this, there is a truck patch of about an acre in extent, and a fruit orchard of of about two acres.

There is a greenhouse, I presume about 120 feet long, divided into three sections, one of which is used as a grapery, where 16 different varieties are forced. Mr. P. told me they produced 400 lbs. of fruit last year. The middle section is used for a mixture of greenhouse plants, all in a good healthy condition. I noticed a fine specimen plant of Pandanus Veitchii variegata growing in a 14-inch pot, a picture in itself. Another fine plant which took my attention was an Allamanda Hendersoni, trained on wire, balloon shape, growing in a tub 18 inches in diameter. The last section is used for forcing roses, which are of the best leading varieties, and looked in a healthy condition. Some extra fine hyacinths were being forced here, two or three different colors in one pot. On inquiry, I found the bulbs cost a little more than the average price, but it is better to have a few of a good article, than many of an inferior kind. Ixias; this beautiful genus of Cape bulbs were found here in variety, growing in 4-inch pots. Sweet smelling Freesia alba, and other good bulbs, may also be noted.

The family mansion at the place is a model of perfection and elegant design. It is of frame, very large, with a finely built porch, where the sweet-smelling honeysuckle and two or three kinds of clematises are trained up.

My last look previous to leaving this place, was at some cauliflowers that were being forced in a pit on the south side of the greenhouse, which the gardener was cutting at the time of my visit in February. It was Henderson's early Snowball. They had lettuce growing in between. This is a matter of some importance to those who have the advantage of a greenhouse heated with hot water, as in this case. Two 4-inch pipes are connected with the greenhouse pipes, and run through the cauliflower frames, which keeps the temperature of the pit about 40°,—ample for cauliflowers. This arrangement can be made at a small cost, and would pay for itself the first year, as good heads of these vegetables generally bring about fifty cents each in March. Twelve sashes, 8 feet long and 3 wide, will grow one hundred heads, $50.00, and one hundred heads of lettuce at ten cents each, $10.00; total, $60.00,—besides having the satisfaction of fresh vegetables from your own place.

[We are much obliged for these notes. There are many places of a similar character deserving of notice, of which one never hears. It would be a pleasure to have similar notes from any chance "Visitor" that might drop in on them.—Ed. G. M.]

A PRETTY WEED—CHELIDONIUM MAJUS.

BY M. D.

Greater Celandine loves well the fence-side. Of course it will flourish elsewhere—indeed one may suppose almost anywhere—and never is it averse to showing its deeply sinuate and always nicely kept pea-green leaves.

With burdock and elecampane, motherwort, an aster or two, the fleabanes, and the round-leaved mallow, it feels thoroughly secure in an angle of the worm fence, or amongst cast aside hoe-harrows, superannuated horse-rakes, and other such like rubbish in an unused corner of the wagon yard.

How neat it is,—how fresh and exuberant! Here in Rochester it bears double flowers, and is at home under certain white palings, enclosing a quiet door-yard that I have in my mind, with a half dozen wayside grasses and the linaria-like yellow-topped cypress plant, Euphorbia cyparissias.

In the outskirts of Boston, Greater Celandine is frequently met with, and in town, beneath the iron fence of the Public Garden, more especially the Boyleston Street side of it, it continues to linger from year to year.

With every recurring spring the spadesman overturns and re-levels the earth of a broad border just inside this very fence railing, but our pea-green friend is beyond harm, for the workman's broad bladed tool and sharp toothed rake cannot easily reach it. No one can object to its presence here, and its willingness to remain amongst uncongenial iron and brick, and yearly throw up its orange-colored flowers and broad-lobed foliage for the pleasure of the passer, should secure for it long life and a permanent holding.

Rochester, July 6, 1886.

CHANGES IN RURAL TASTE.

BY D. W. LOTHROP.

In riding through the suburbs of our northern cities and larger towns, the man of sixty years or so cannot fail to notice the remarkable change that has taken place within a few years in rural ornamentation, particularly in the styles of architecture and the color of dwellings of moderate size of which only it is now proposed to make a few observations. When it is said remarkable, the term will bear emphasis, especially in relation to painting. When the tasteful and discriminating Downing wrote, forty years or so ago, cottages and villas of any pretensions exhibited a degree of applied judgment in their construction which is far less often seen now; and their colors, instead of being patched, striped and gaudy (in true toy-shop style), were few, soft and refined, which lent their harmony in a measure to the surrounding objects of nature. Now many dwellings, at a little distance, seem a mere conglomeration of many-sided and various-sized blocks, some shingled and others clap-boarded, with not a few common conveniences ignored, and hardly two windows alike in size or glass—presenting among other designs, the quarter-moon, the half-moon and the full-moon; and added to these sensational novelties is a tawdry style of painting which one would conjecture was a combination of that of the chequer-board, the barber's-pole and the American flag! Another new and fashionable feature in painting is red roofs. In subordinate buildings they may be tolerated; but where there are many in a village, from an eminence they unpleasantly remind one of a brick-yard. Still, though art may suffer, the painter is happy.

Why it is the tendency of the present age or generation to adopt this grotesque style of building and this fantastic style of coloring, may not be easy to decide. One reason probably is, we have no fixed standard of beauty or taste in these matters, as some may suppose we have; and in the nature of things it cannot be otherwise; for rural art rests upon a few rather vaguely-defined principles (a kind of unwritten law), which by some builders are unrecognized, or degenerate with them into mere whims or fancies. Beauty is pleasing to the sense through the eye as music is through the ear, and it is not a subject of much reasoning, but is rather emotional, especially when we rise from the lower to the higher types. Evidently every sensible person would prefer a chastely-painted gothic cottage to a whitewashed hovel, though the details of the former might create a difference of opinion.

Then, generally speaking, taste—which we may define as the power of discerning beauty and of creating it—is much an individual consideration, and we are apt to think that ours is right, as we generally do our watches, to use an old phrase. In this respect it may be not much unlike the personal conscience of which Butler the poet says:

> "'Tis the dark lantern of the spirit,
> Which none see by but those who carry't"

Then again, rural taste may be much influenced, if not radically changed, by some crude examples or trifling incident connected with men of wealth, knowledge or power. Repton, the great English landscaper, laments that some English nobleman or dignitary, with little intention or forethought, may make a certain style in rural art popular that has little or no merit in it. With the same idea in literature, Pope, in his "Essay on Criticism," writes:

> "Great wits sometimes may gloriously offend,
> And rise to faults true critics dare not mend."

Whence fashions spring, however, it is frequently difficult to determine, though it is well known where they rage.

The rapid changes in the color of houses to-day one would be apt to charge to the painters; but some money and a love of ostentation with owners will often do strange things. Men of means undoubtedly sometimes build, not for the purpose of presenting anything beautiful, but for the sheer love of eccentricity, and a few others will commend their productions as the expression of an original and refined taste. Thus it is that any incongruous style in landscaping, building and painting, may get a start on the road to popularity, and a portion of the public are led to "admire whate'er the maddest can admire."

Changes must come, however, but we cannot say "woe be to them by whom they come," for some may be commendable. And it is a somewhat curious fact which most persons must frequently confess to—while it should "dull the edge" of our criticism—that in what we term false or bad taste and are accustomed daily to observe, we first endure, then palliate, then accept.

West Medford, Mass.

[We commend this criticism to the good taste of the reader. We are sorry to say the toy-shop and barber's-pole styles are as frequent about Philadelphia as they are about Boston.—Ed. G. M.]

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EDITORIAL NOTES.

Planting Large or Small Trees.—At a recent meeting of the Massachusetts Horticultural Society, Mr. Francis H. Appleton said:

"In regard to the size of trees to be planted, the experience of the essayist has resulted in the belief that it is best as a rule to set out comparatively small trees—say not over four or five feet high—for evergreens, and to use a considerably greater number than will eventually be needed, in order that they shall give mutual protection until they become well established. Deciduous trees, whose branches can be trimmed in so as to bear a proper proportion to the roots, may be planted from six to eight feet high. Shrubs and vines are best with small tops and ample roots. When there is any question as to the size of a tree, it is best to use the smaller, which will have a greater chance of success."

This is not the experience with Philadelphia planters. It depends wholly on how the tree is dug, whether a small tree is better than a large one. When people stick to the old recommendation of planting a large tree with a "ball of earth," the small one is undoubtedly best, because the best roots being farthest from the tree, they get left in the ground, while we are caring for the ball of earth which has few good roots in it. A large tree as often moved, is little better than a cutting.

When moved, as intelligent planters about Philadelphia now move, with care to get the roots at the extremities, they find large trees do just as well as small ones, and save often ten and twelve years in getting an immediate effect. Few, in the light of modern horticultural knowledge, would feel that there was any difference in risk, provided the sizes were of equal vigor and equally well dug. The preference is a mere question of cost.

An Orange Hardy for the North.—It is said that Citrus trifoliata either has, or is likely to stand hardy in any ordinary winter south of New York. The fruit is not very good, but improvements may come from it.

Picea Omorico.—A new spruce, apparently allied to the oriental spruce, but with much shorter cones,—the cones, indeed, like our black spruce—has been described under this name by Prof. Pancic. It grows in the north of Europe and Asia.

Kew Gardens.—The Royal Gardens at Kew have from 170 to 180 persons in continuous employ. The annual cost for the whole maintenance of the establishment is $100,000.

The Japan Witch Hazel.—The Japanese left a plant of this in their garden at Fairmount Park, at the Centennial. It is said to flower in spring, whereas the American flowers in the fall. It is Hamamelis arborea; the American is H. Virginica.

Southern Gardening.—One can scarcely appreciate the great difference between the plants that do the best service in Southern gardening, as against those that are common in the north, until they have read carefully the catalogue of some first-class firm like the one issued by P. J. Berkmans, of Augusta, Georgia, now before us. This is the twenty-first annual edition and shows a commendable growth, indicative of great business success. The following is a list of broadleaved evergreens—none except the box would be considered hardy in Philadelphia: Ardisia, Aucuba, Buxus (tree box in variety); Cerasus Lauro-cerasus (English Laurel), Colchicum and Caucasian Laurels, Cleyera Japonica, Eriobotrya, Escallonia, Euonymus, Gardenia (Cape Jasmine, four varieties); Illicium, Laurus Nobilis, Nerium, Tea, Olive, Magnolia fuscata or Banana Shrub, Photinia, Pittosporum, Viburnum.

Virginia Creeper and English Ivy.—Mr. J. G. Barker tells the Massachusetts Horticultural Society that the ampelopsis should not be planted with the idea of covering a brick building; for the brick is too smooth for it to cling closely. The essayist spoke of a brick church, the side of which was entirely covered, but it was twice blown down and took many days' labor to replace it. For such places the Ampelopsis Veitchii (sometimes called Japan ivy) comes in; when once started it takes care of itself. Those who have noticed it on Trinity Church, and many residences on the Back Bay, need no description of its beauty. On the gateway of Forest Hills Cemetery it may be seen in unsurpassed beauty, especially in the latter part of September, when its foliage is of such indescribably rich color as to lead a lover of beautiful plants to say that it was worth coming a thousand miles to see.

About three years ago the Ampelopsis Veitchii was planted alternately with English ivy at the base of a ledge, about twenty feet high, the brilliant autumnal color of the former forming a most beautiful contrast with the bright green of the latter. The English ivy should, however, have a few pine boughs tied over it about the last of November, to be removed about the first of April. Many large boulders at Forest Hills are used as memorial stones instead of monuments, having a bronze tablet set in for the inscription, and these stones are covered with Ampelopsis Veitchii.

Striped Roses.—Roses occasionally produce branches with striped flowers. When these are cut off and rooted the character continues with more or less permanence. But often they revert to the original self-color, and the purchaser, making no allowance for this, believes he has been imposed on. Still, rose dealers have to risk this sometimes. Messrs. Paul & Son, of England, have now a striped one they call Pride of Reigate. It is a sport from the Countess of Oxford, and so far seems to hold its own.

Companion Plants.—We have often called attention to the excellent effects in landscape gardening of grouping trees or shrubs in order to enhance the effects of each kind. Those plants which flower before the leaves, like the Judas tree or Golden Bell, when planted with pines or spruces for a background, give a wonderfully pretty charm to the whole group.

Spiræa Japonica.—Under the name of Astilbe this is now common in florists' cut-flower work. Astilbe is a genus of the Saxifrage family, and though this plant is very nearly a saxifrageaceous plant, it is truly a rosaceous plant, and a Spiræa. It has also been known as Hoteia Japonica. Besides its value for forcing as a cut-flower, it is an admirable herbaceous plant for the open border.

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

The great variety which gives so great a charm to landscape gardening, is always in the eye of the flower cultivator, for it is the infinite variety in the form, color, and character of flowers that gives the greatest zest to the grower. Often, however, we depend on the flowers themselves for this variation, but much may be done by the cultivator to give variety, even by the manner of growth in the specimens themselves. But even here judgment is required to suit the character of the training with the style of the plant to be trained. In the fuchsia, for instance, where it is usual to let the plant grow any way as it pleases, we may introduce a number of styles of training that would be in accord with the habit of the plant, and add much to the pleasure which variety gives. The pyramidal form is one that is very popular with the best fuchsia growers, but this does not permit the complete clearance of the flowers from the branches that their form requires for perfect development. When trained as standard, the effect is very beautiful.

To make the standards they may be trained up to a single stem, all attempts to make side branches being checked till the desired height is reached. In the Old World some good results have been had by grafting on the very strong growing kinds, such as the Fuchsia fulgens, or F. arborescens. Other plants may be trained as standards when the habit permits an advantage to be gained. Some things, so trained at times, are not, however, improved by the style. We have seen the common geraniums, Zonale pelargoniums, as they are sometimes called, treated in that way, but the thick, bunchy heads do not allow one to think the style pretty. But the the trailing ivy-leaved species are well adapted to this mode of growth.

When plants are set out in their pots for the summer season, a slight degree of shade is found beneficial. Some people of taste arrange them into designs, like flower beds, and this gives them an additional interest. For this work, trained fuchsias and other plants, as described in the last paragraph, help to make up very pretty work. Greenhouses for rare or beautiful plants are not so common as they might be, for the reason given, that they are of little interest in the summer time in our warm climate. But those who keep their pot-plants under trellises in summer, and take an interest in them, have nearly as much pleasure in them as when in their winter quarters. Most plants like to be out of the houses in summer. Even a large number of species of orchids seem to prefer the summer out-door life. It is well to examine all plants before setting out, to see that the drainage is good. In the house we can see when plants need water, and they get it only when they do, so that a badly drained plant may not suffer badly. But out of doors a heavy rain storm cannot be controlled, and hence valuable plants often die from becoming water-logged. There is nothing more important to successful plant growth, than to have the water pass rapidly away from the roots of the plants.

Standard Fuchsia.

Those who grow largely of carnations, bouvardias, chrysanthemums, and similar plants, usually plant them in the open ground at this season, and take them up and carefully repot them in September. It is a much better plan than the old one of worrying along with them in pots all summer.

Calla lilies, as people will call the Richardia Æthiopica, flower much better next winter, when kept dry from now to August, when they should be repotted, and then regularly watered and cared for.

Azaleas flower better if the pots they are growing in are placed in the sun in this latitude. But they require great care to see that they are well drained, and yet do not suffer for want of water.

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COMMUNICATIONS.

STEAM HEATING.

BY E. HIPPARD.

In answer to Mr. I. C. Wood, of Fishkill, N. Y., I will endeavor to throw as much light upon the subject as possible, in regard to amount and cost of fuel used during the season thus far, and for the two months of December and January, when our mercury fell from 10° to 17° below, and very often from 10° to 12° below. As near as I can judge we used about 30 tons of pea coal during the two months mentioned, at a cost of 85 cents delivered on track here, with 40 cents added for drayage, making for the two months, $37.50; and for the whole season's firing it will require about 4½ carloads, with $25.00 worth of wood added, we use for burning off the soot from the drop tubes.

By actual experience I find that for steam making, the fine coal, such as I use, is equally as good and lasts fully two-thirds as long as the expensive lump coal Mr. W. buys at $4 50 per ton. With us it would cost about $2.25 to $2.50, nearly as much as 3 tons of pea coal. I think Mr. W. should be well satisfied that he did not burn more fuel with the kind of boilers he uses, as they are great destroyers of coal; the draught being straight and direct, passes off fully one-half fuel without any benefit, the combustion being too rapid. What we want is a boiler with large grate surface, and as slow a combustion as possible. In it lies the secret of economy. *Youngstown, Ohio.*

IMANTOPHYLLUM MINIATUM.

BY CHARLES E. PARNELL.

Imantophyllum miniatum is a remarkably robust growing, free flowering greenhouse plant, belonging to the natural order Amaryllidaceæ; and is a native of Natal, whence it was introduced in 1854.

It may be described as being an amaryllis-like plant, having ligulate acute distichous bright green leaves, from one to two feet in length, and producing its flowers in large umbels on an erect scape about 2 feet in length. Each umbel contains from twelve to eighteen flowers, which are individually about two inches across. In color they are of a deep orange crimson, gradually changing towards the center to a deep buff. Its period of blooming is throughout the spring months.

When well grown it is certainly a striking and very ornamental greenhouse plant, and one or more specimens should be found in every collection. Moreover, it is an excellent plant for cultivation in the window garden.

The Imantophyllum is a plant that can be easily grown, and does best in a compost of two-thirds turfy loam, one-third well decayed manure, and a fair sprinkling of bone dust. In potting, use porous or soft baked pots, and let them be well drained, and proportionate to the size of the plant; for although the Imantophyllum requires an abundant supply of water, yet it soon suffers if the soil becomes sour, or water is permitted to stand around its roots. It does best when grown in a light sunny situation, and a temperature of from 50° to 55°. For the summer season the plants should be set out about the middle of May, in a deep, well-enriched border, in a partially shaded situation, where they should be well watered during seasons of drought, or whenever necessary. About the first of September they should be carefully taken up and potted, using care not to injure their thick fleshy roots.

Or the plants can be repotted in May, and then plunged in the open air in a partially shaded situation, but if this is done, great care must be exercised to keep them properly supplied with water. I prefer planting them out, for not only do they require less care, but the plants are much benefited by the change, although at the same time I strongly insist on their being taken up and potted early, so that they can become well rooted before cold weather sets in.

Propagation is effected by a careful division of the plant, and this operation should be performed in May, while repotting them or planting them out for the summer.

The specific name was derived from "imas," a leather thong, and "phyllon," a leaf, in allusion to the shape and substance of the foliage.

Queens, N. Y.

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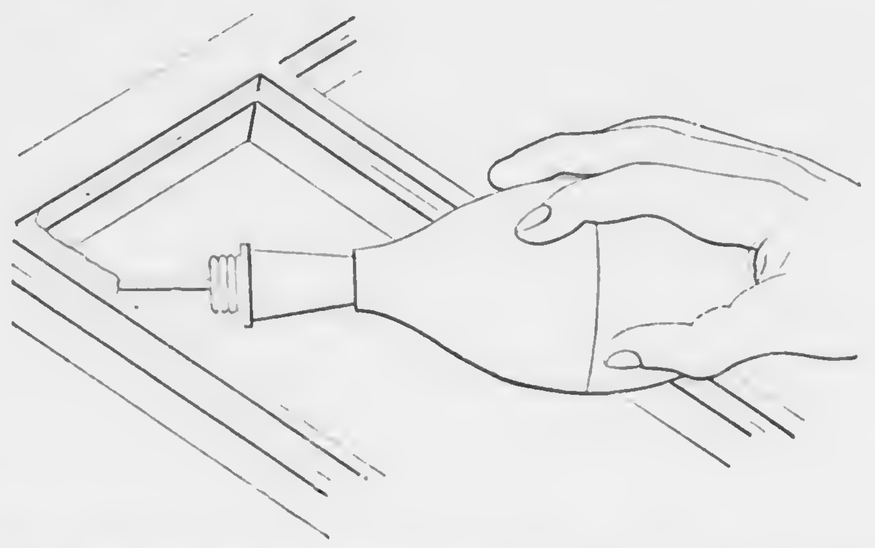
EDITORIAL NOTES.

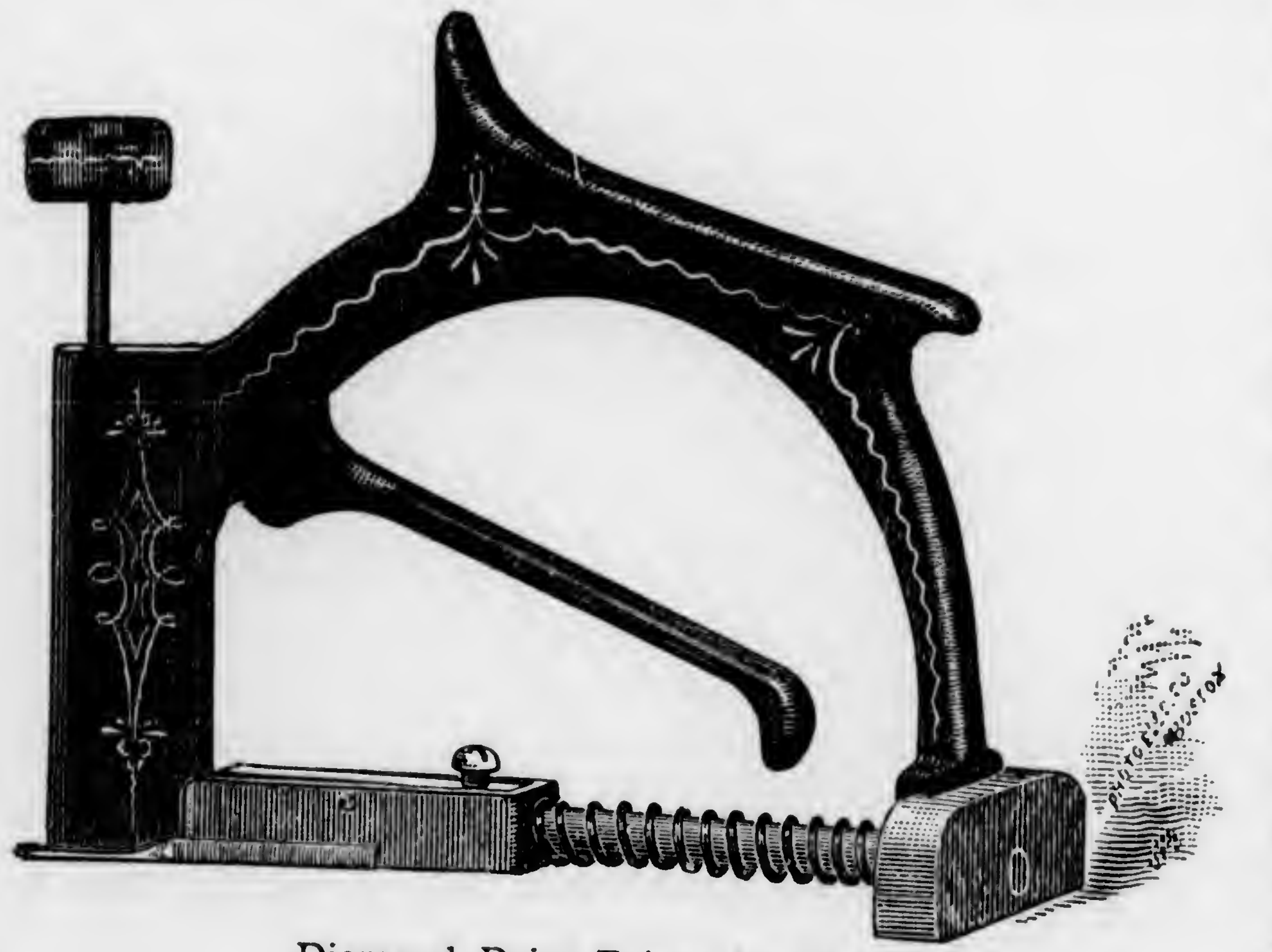
GLAZING GREENHOUSES.—Some time since, we noted that no one now thought of glazing with putty, and this has brought us an inquiry, what is the substitute?

For the outside of sashes we do not need any substitute. No putty is needed on the outside. It can be made so hard that it will not separate from the wood, but usually it does separate enough for a little water to get in. When frost follows and the water congeals the cleft is made wider, the putty becomes loose and water gets through. There is no house so leaky as one usually glazed with putty.

The modern practice is simply to bed the glass in putty, and some do not even do this, but use a semi-fluid putty-like mixture which they inject into the crevices by means of an India-rubber putty-bulb, of one of which we give an illustration herewith.



The glass is first fastened with triangular brads—glazier's sprigs they are called. These are simply cut out of tin. It is not easy to drive these without the expenditure of much time. To aid in this, an extremely useful invention is that of Messrs. H. W. Williams & Sons, of Batavia, Illinois, which the annexed cut represents. This has a special style of brad adapted to it, and which drives them in with great rapidity. It is one of the most useful inventions we have met with for a long time, and very much lessens the cost of glazing.



Diamond Point Driver for Glazing.

There are many new and improved methods of glazing without putty, and most of them very meritorious, but which usually require skilled labor to operate successfully. For the work which any one may do, we doubt whether there is anything more acceptable than Williams' putty bulb, and the Diamond Point Driver.

THE GROWTH OF GREENHOUSES IN SCOTLAND.—In an essay before the Scottish Horticultural Association, Mr. McKenzie, a noted hot-house builder, said that during the past ten years, $100,000 worth of buildings had been put up by professional builders, to say nothing of the great number of houses built by people by the aid of the local carpenters and gardeners.

CUT ROSES AS ROOM ORNAMENTS.—These should be cut in the bud. They will then give pleasure for a long time. If cut just as they are opening the petals soon fall.

A GIANT PRIMROSE—PRIMULA IMPERIALIS.—This plant recently introduced from the Himalayas to the gardens of Europe, is said to have stems 3 feet in height.

NIGHT ROSES.—A German paper says that those florists who want the best effect from their work, use different roses for night than for day decoration. Some roses, fine by day, have an ineffably shabby look as evening flowers; others improve under shade.

DEUTZIA GRACILIS.—In spite of the continuous change of fashion in flowers, the pretty white Deutzia gracilis holds its own as a winter forced flower for cutting, with florists. It is not regarded as very profitable, but somehow it cannot well be replaced.

FAN BOUQUETS.—The fan style of bouquets that once was popular, is now again competing with the mushroom style that now almost universally prevails. It commends itself to some florists as costing less than the mushroom, as less flowers are employed; and more sales result.

RAPHIA VANIFERA.—This is one of the most beautiful of all palms. It has a clean solid stem, rising to a considerable height, with a large tuft of leaves at the apex, each leaf much larger than the trunk, divided up into an immense number of narrow, and comparatively short pinnules. They may be likened to immense quill feathers. To say that it is a palm with a huge feathery appearance, is just the thing.

AUSTRALIAN ACACIAS.—For those who have conservatories or houses free from frost, there is nothing more desirable than the Australian Acacias. They take some room, growing usually from 3 to 30 feet—but they all bloom young, and even the largest may be kept low by training. They bloom from Christmas to March or April.

FULLER'S ROSE BEETLE.—The larva or grub of Aramigus Fulleri, which makes such havoc among the rose roots in forcing houses, is believed to be a native of Montana, and came to us, like the potato beetle, by railroad, as soon as the country was opened up.

AMERICAN METHODS OF GROWING FLOWERS FOR CUTTING.—We have before noted that the European method of growing everything for cut flowers in pots, seems odd to American flower growers. They, on their part, seem surprised at the ease with which we grow them. A correspondent of the *Gardening World* says:

"I may as well mention here that the florists in America plant out their Roses, Carnations, &c., and it is certainly marvellous how well they do, for finer crops and grander flowers I never saw. Another plant that is extensively grown, and for which there is a very great demand, is Myrsiphyllum asparagoides (Smilax). This they plant out, and it is a common thing to see houses devoted exclusively to its cultivation. I have seen houses of it with hundreds of sprays trained up string 6 feet high. They grow it in this way, and sell it so much a string; and it is invaluable to the bouquetist. It stands well, and should be tried here in this country, but I have never seen it attempted."

ORANGE TREES.—It is often supposed that an orange tree in a tub in northern gardens is to be considered a mere matter of curiosity, or at most of floral love. But those who take care get good fruit. Nahum Stetson, of Bridgewater, Mass., produces them of such fine quality that the Massachusetts Horticultural Society awarded him a silver medal for some in February.

ORCHID SEEDS.—It is a well known fact among our wild orchids, such as Cypripediums and the like, that they do not seem to spread, though apparently seeding freely. If there are a thousand plants in one spot to-day, likely there will be but a thousand in the next twenty years. The same fact has been noted in the Old World, and a correspondent of the *Gardening World* tries to account for it:

"A single capsule of some of our commoner native species would produce over 6,000 seeds, while some of the exotic Maxillarias have been calculated to contain about a million. This number is probably much exceeded by Cattleya gigas, and seeing that the progeny of the third generation of a species producing the lowest mentioned number of seeds is sufficient to cover the entire surface of the globe with plants, it is very obvious that a very small percentage ever become plants at all. Their minuteness and the very little nutriment they contain precludes the idea that they offer great temptations to, and are destroyed by birds. Again we see that our native orchids thrive admirably when they have succeeded in establishing themselves, a fact which suggests the idea that they either do not germinate or are killed in the process of germination or soon after. The length of time they require to complete this process must be fatal to their well-being in this our changeable climate, where the necessary conditions as to heat and moisture are too inconstant and variable to allow the seedlings to establish themselves; whereas, the seedlings of other plants are ready to spring into life and activity upon the accession of the proper degree of heat and moisture, those of orchids are unable to do so."

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SCRAPS AND QUERIES.

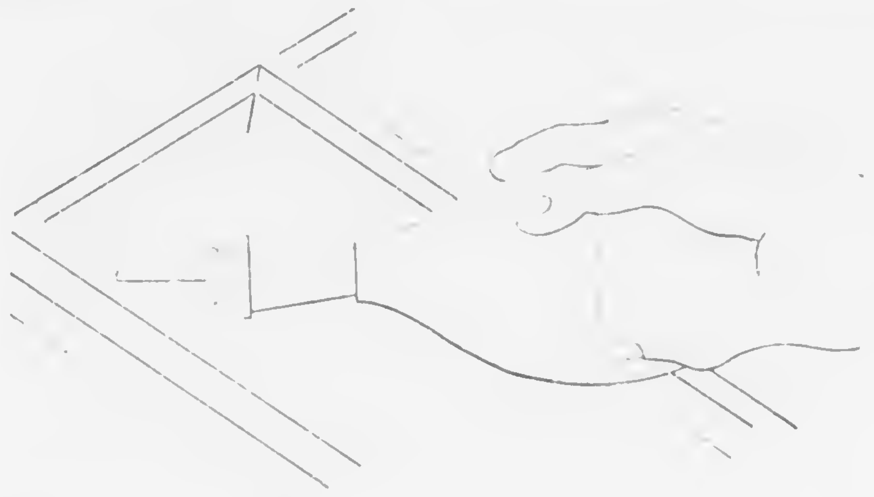
CAMELLIAS AND ROSES.—Camellias love to grow in partial shade, and in our country, do best in greenhouses that have a northern slope. In the old world, a famous grower has them in a span-roofed house, but the glass is shaded from the plants by Marechal Niel roses, trained under the glass. It is said this combination is very profitable to the grower.

W. F. BENNETT ROSE.—"F. B.," Philadelphia: This is not a seedling in the ordinary sense of the word in which the raiser had to guess at the origin, but as we understand an actual cross made with forethought and manipulation by Mr. Henry Bennett, between Xavier Olibo and The President.

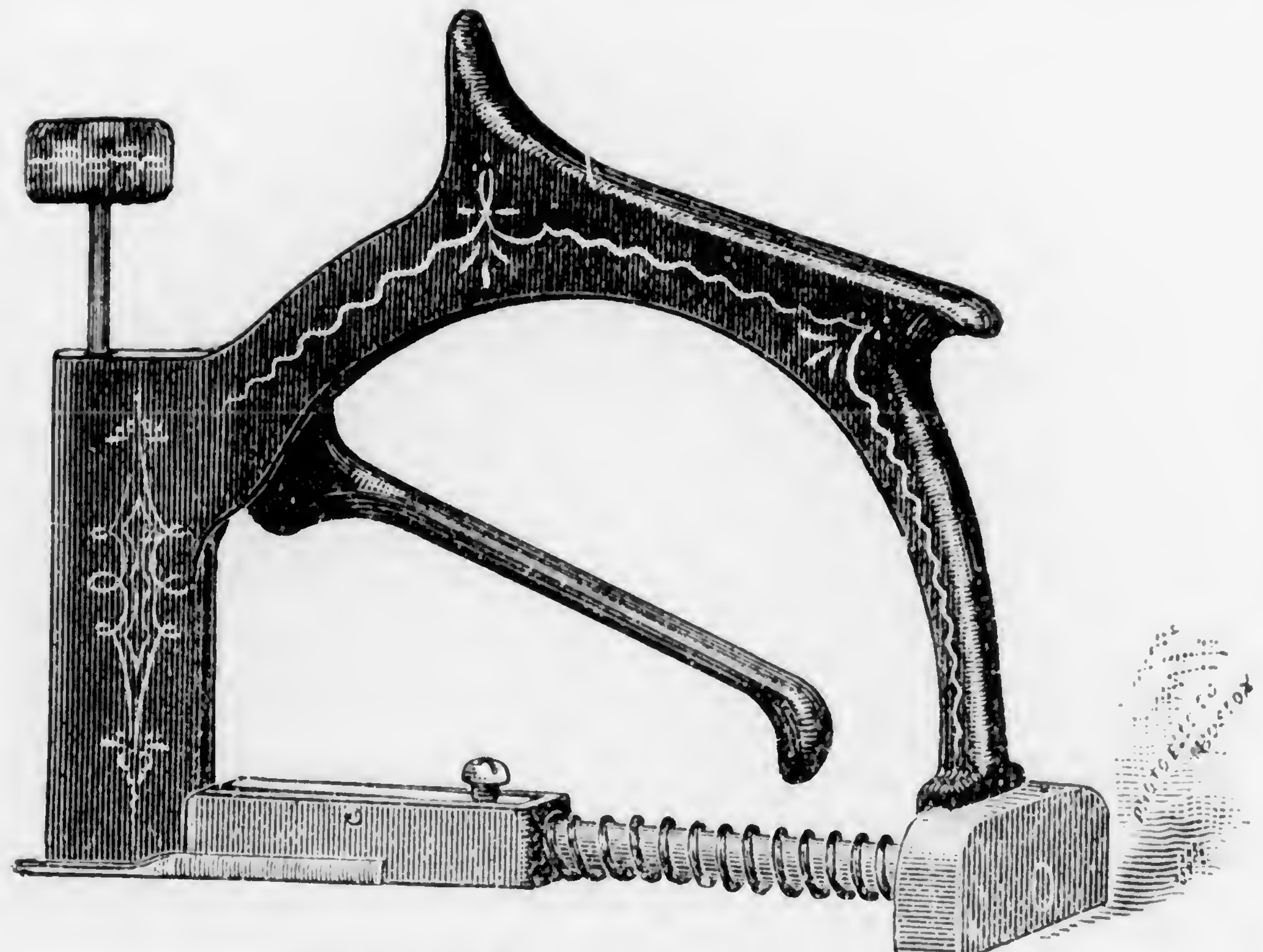
CULTURE OF CYCLAMENS.—A correspondent of *Vick's Magazine* writes that Cyclamens planted out into very rich ground in June and repotted in September, give much more satisfactory results than when kept in pots all summer in the usual way.

the wood, but usually it does separate enough for a little water to get in. When frost follows and the water congeals the cleft is made wider, the putty becomes loose and water gets through. There is no house so leaky as one usually glazed with putty.

The modern practice is simply to bed the glass in putty, and some do not even do this, but use a semi-fluid putty-like mixture which they inject into the crevices by means of an India-rubber putty-bulb, of one of which we give an illustration herewith.



The glass is first fastened with triangular brads—glazier's sprigs they are called. These are simply cut out of tin. It is not easy to drive these without the expenditure of much time. To aid in this, an extremely useful invention is that of Messrs. H. W. Williams & Sons, of Batavia, Illinois, which the annexed cut represents. This has a special style of brad adapted to it, and which drives them in with great rapidity. It is one of the most useful inventions we have met with for a long time, and very much lessens the cost of glazing.



Diamond Point Driver for Glazing.

There are many new and improved methods of glazing without putty, and most of them very meritorious, but which usually require skilled labor to operate successfully. For the work which any one may do, we doubt whether there is anything more acceptable than Williams' putty-bulb, and the Diamond Point Driver.

THE GROWTH OF GREENHOUSES IN SCOTLAND.—In an essay before the Scottish Horticultural Association, Mr. McKenzie, a noted hot-house builder, said that during the past ten years, $100,000 worth of buildings had been put up by professional builders, to say nothing of the great number of houses built by people by the aid of the local carpenters and gardeners.

CUT ROSES AS ROOM ORNAMENTS.—These should be cut in the bud. They will then give pleasure for a long time. If cut just as they are opening the petals soon fall.

A GIANT PRIMROSE—PRIMULA IMPERIALIS.—This plant recently introduced from the Himalayas to the gardens of Europe, is said to have stems feet in height.

NIGHT ROSES.—A German paper says that those florists who want the best effect from their work, use different roses for night than for day decoration. Some roses, fine by day, have an ineffably shabby look as evening flowers; others improve under shade.

DEUTZIA GRACILIS.—In spite of the continuous change of fashion in flowers, the pretty white Deutzia gracilis holds its own as a winter forced flower for cutting, with florists. It is not regarded as very profitable, but somehow it cannot well be replaced.

FAN BOUQUETS.—The fan style of bouquets that once was popular, is now again competing with the mushroom style that now almost universally prevails. It commends itself to some florists as costing less than the mushroom, as less flowers are employed; and more sales result.

RAPHIA VANIFERA.—This is one of the most beautiful of all palms. It has a clean solid stem, rising to a considerable height, with a large tuft of leaves at the apex, each leaf much larger than the trunk, divided up into an immense number of narrow, and comparatively short pinnules. They may be likened to immense quill feathers. To say that it is a palm with a huge feathery appearance, s just the thing.

AUSTRALIAN ACACIAS.—For those who have conservatories or houses free from frost, there is nothing more desirable than the Australian Aca- as. They take some room, growing usually from to 30 feet—but they all bloom young, and even the largest may be kept low by training. They bloom from Christmas to March or April.

FULLER'S ROSE BEETLE.—The larva or grub of Aramigus Fulleri, which makes such havoc among the rose roots in forcing houses, is believed to be a native of Montana, and came to us, like the potato beetle, by railroad, as soon as the country was opened up.

AMERICAN METHODS OF GROWING FLOWERS FOR CUTTING.—We have before noted that the European method of growing everything for cut flowers in pots, seems odd to American flower growers. They, on their part, seem surprised at the ease with which we grow them. A correspondent of the *Gardening World* says:

"I may as well mention here that the florists in America plant out their Roses, Carnations, &c., and it is certainly marvellous how well they do, for finer crops and grander flowers I never saw. Another plant that is extensively grown, and for which there is a very great demand, is Myrsiphyllum asparagoides (Smilax). This they plant out, and it is a common thing to see houses devoted exclusively to its cultivation. I have seen houses of it with hundreds of sprays trained up string feet high. They grow it in this way, and sell it so much a string; and it is invaluable to the bouquetist. It stands well, and should be tried here in this country, but I have never seen it attempted."

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INTENTIONAL SECOND EXPOSURE

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

The paramount question with the fruit gardener is the destruction of insects. We have to confess to a belief that all schemes for their wholesale destruction have proved failures, and that our best hope is in their individual destruction. The different kinds of moths and flies may be entrapped by the thousand, in a persevering employment of wide mouthed bottles of sweet liquids hung about the trees. The curculio, whose most tempting allurements do not lie like moths in the way of sweet food, but in finding a nice juicy nidus for the deposit of eggs wherewith to perpetuate its species, can be slain by the hundred, by perseverance in the shaking process. A snag, made by sawing off a small branch a few inches from the main trunk of the tree, should be secured on each, on the point of which to hammer, or otherwise the bark of the tree would be irreparably injured. With a sheet spread under the tree, and a sharp, quick jar with the hammer, all the pests then on the tree may be secured and destroyed. They are rather lazily inclined, but still a few will come from your neighbor's trees; but a few jarrings occasionally will keep them down. Experience has shown that this course, which only demands a little labor, is much more effectual than the thousand schemes that have been devised for hanging various charms about the branches, and then kneeling down and crying on Hercules for assistance.

Watch newly planted fruit trees. If they have but a few weak leaves only, it shows the roots have been injured; then prune them severely, which will make them grow freely. It should be a main object to make all transplanted trees not merely have leaves, but have new shoots at the earliest possible moment. If they are growing very well, they may be allowed to perfect a few fruit. Overbearing on a newly planted tree is, however, one of the best ways of making it stunted for years.

Handsome forms are as desirable in fruit as in ornamental trees. No winter pruning will do this exclusively. It may furnish the skeleton,—but it is Summer pinching which clothes the bones with beauty. A strong shoot soon draws all its nutriment to itself. Never allow one shoot to grow that wants to be bigger than others. Equality must be insisted on. Pinch out always as soon as they appear, such as would push too strongly ahead,—and keep doing so till the new buds seem no stronger than the others. Thus the food gets equally distributed.

Where water can be commanded, there is nothing so profitable as to well soak the soil about small fruits; first about the time that they have set their fruit. Much of the value of this operation, however, will depend on the nature of the soil. The advantages are least in a tenacious, and greatest in porous soil. It is said that an animal derives most benefit from food when it is hungry before it begins to eat; it is certainly so with plants. Water applied to soil already wet is an injury; and water never has so telling an advantage on vegetation as when every leaf is about to wither up for the want of it. A plant that never seems to want water is in a very doubtful condition in regard to its health.

In the vegetable garden the asparagus beetle is growing every year more troublesome. We know of nothing better than poisoning the larvæ,—but this is so dangerous in the vegetable garden that the work should be entrusted to none but extra careful hands. "It is said" that slightly salt water will kill the cabbage worm without much injury to the cabbage. Perhaps something of this kind may be useful against the asparagus pest.

In the cultivation of garden crops, the hoe and rake should be continually at work. Weeds should be taken in hand before they are barely out of the seed-leaf, and one-half the usual labor of vegetable gardening will be avoided. Hoeing or earthing up of most garden crops is of immense advantage in nearly every case. One would suppose that in our hot climate, flat culture would be much more beneficial; but a fair trial, say on every other row of a bed of cabbages, will show a great difference in favor of the earthed-up plants. It would be easy to explain the reason of this, but in this column we try to confine ourselves to "hints," and leave reasons to our other departments.

In sowing seeds, it is well to remember that though the soil should be deep and finely pulverized, a loose condition is unfavorable to good growth. After the seeds are sown, a heavy rolling would be a great advantage. The farmer knows this and we have often wondered that the practice never extended to garden work.

COMMUNICATIONS.

THE YELLOWS AND PLUM STOCKS.

BY MAX.

In the March issue of the MONTHLY is a suggestion from Mr. C. Hiller that it might be profitable to utilize the non-producing Blackman Plum as a stock upon which to bud peaches. Mr. H. thinks this would be a protection against the yellows. And the Editor gives a quasi endorsement.

Accepting your theory as to the cause of this disease, at least until we get more light upon the subject, let me give you a few facts, from which you and your readers may draw the best conclusions they can.

Thirty-five years ago the writer's father tried the experiment of budding peach on plum stocks with the hope of securing more healthy and hardy trees. Alas, the result was the same as on peach stocks. Two or three crops of fine fruit and then an orchard of dying trees. About ten years ago a gentleman in Frederick County, Virginia, concluded that plum stocks would be yellows-proof and planted an orchard of two hundred trees. Last fall he was engaged in cutting them down and grubbing up the debris, and wanted to know if burning the wood and roots and burying the ashes would do anything toward destroying the fungi or whatever might be the cause of the yellows.

Now if fungus mycelium does attack the plum roots, as the above facts indicate, would it not be more likely to attack the Blackman, than any other plum? It is claimed that the Blackman is half peach and you think the fungus mycelium more partial to the peach than the plum—ergo the Blackman would be sooner attacked than the purer stock.

Oh! for a book to tell us all we want to know about these things. In the meantime we are very grateful to the GARDENERS' MONTHLY for the careful aid and genuine light it gives.

Richmond, Va.

[This is the first evidence that seems positive that peaches on plum stocks will get the yellows. It is so important a matter that we should like still further experience.

We saw ourselves in Southern Pennsylvania, a large block of nursery trees, one year from the bud, peaches grafted on Myrobolan plum stocks. These were yellow and sickly,—but the yellowness was not from the disease known as the yellows. Is it not often the case that peaches with yellow leaves from some interference with proper nutrition, are often mistaken for trees sick with the yellows?

Scientific men who have not had the practical experience which nurserymen and large peach growers have, when undertaking to tell us the cause of yellows, often leave us in doubt whether they have had the genuine disease under their hands in their experiments; and hence we do not place the same value on the results as if we had more certainty about this fact. Those who tell us that the yellows come from starvation, and the want of some particular element in the soil,—and that they have cured the disease—made a sickly plant healthy, by good manure and cultivation,—have certainly not had the real disease to deal with. In the true "yellows" we do not see the results till the plant is past recovery.—Ed. G. M.]

EDITORIAL NOTES.

THE CALYX IN NOMENCLATURE.—German Pomologists figure the flower when illustrating an apple, as good distinguishing characters may often be drawn from it. The form of the calyx and petals, and the relative proportions, are often very different in different varieties.

KEEPING FRUITS FROM INSECTS.—If those who establish orchards in new locations would watch for the first introduction of insect pests, so as to prevent their spread, they might often hold their profits well in hand for many years longer than do those who take no such precautions. In California some understand this. Mr. John Dillon has a fine apple orchard on the north fork of the Tule River, which he watches in this way, and his beautiful apples, clear of all insect marks, are making a nice income for him.

TRICYCLE PLOUGHS.—When the English farmer first saw McCormick's reaper at the great first Crystal Palace show, it was an astounding sight. When they get to see the American tricycle plough, which a horse will draw through the earth with the driver sitting on it with more ease and comfort than the best old ploughs, they will even be willing to spell the word p-l-o-w in their enthusiasm.

PROTECTION TO FRUIT INDUSTRY.—England and her Colonies in sympathy with her policy profess to be opposed to protection and favor free trade as a general principle—yet once in a while "tax the community," to help some struggling interest or another, which is protection of the best kind. For instance, the Government of Canada, has spent money in collecting and sending its fruits to the Colonial exhibition in London. The following from the *Gardeners' Chronicle* of October 23d, shows how well these fruits were received. The money spent by the Government in this kind of protection, will revert immeasurably to the interests of the Dominion.

"One of the most comprehensive displays of Canadian fruit ever made in Europe is now on view in the conservatory of the Colonial and Indian Exhibition. Contributions are made from every province of Canada, from Nova Scotia and New Brunswick to Quebec and Ontario, and even from Manitoba and British Columbia, the greater part of the exhibits having been collected, under the direction of the Canadian Government, by Professor William Saunders, of the Western University, London, Ontario, who has long taken a keen interest in Canadian fruit culture. From Ontario and Quebec excellent specimens are shown of the varieties of apples mostly shipped to British markets, and the body, texture, and flavor of these must command general admiration. The pears are noteworthy for size and color; while an excellent display of vegetables, and even Canadian out-door grapes, is made. The Nova Scotia display comprises some fifty varieties. The British Columbia and Manitoba varieties are also interesting, as coming from parts of the Dominion but little known in England for their fruit-growing capabilities. It is, moreover, important to note that the shipment of many of the early soft varieties of fruits now shown was made from Canada in refrigerators, and the perfect condition in which they arrived is considered to fully establish the value of this means of transit."

GREAT BRITAIN AND IRELAND AS FRUIT CONSUMERS.—The British Islands are not large, but some idea of the dense population may be imagined from the fruit consumed. It is said the value of the fruit importations last year was forty millions of dollars. It is wonderful and hard to believe, but they are official figures.

AMERICAN PRESERVED FRUITS.—European papers complain that the preserved canned and bottled fruits, especially of peaches, plums, apricots and pine-apples, are now so nearly as good as the fresh fruits, that they are entering largely into European consumption, and threaten to seriously interfere with the profits of the European fruit culturist.

THE FIRE-BLIGHT FUNGUS IN THE PEAR.—Prof. Arthur proves very clearly that only the one Bacterium, Micrococcus amylovorus, has to do with the pear blight. He inoculated the fruit—a pear—with many other species, but they did not spread. When mixed with this species, none grew but this particular one. So far no other species but this was found injurious to the pear.

THE KIEFFER PEAR.—This has fruited in England, and pronounced of good but not first-rate quality.

SKILL IN RIPENING PEARS.—While writing on the proper ripening of pears recently, we took occasion to say that there was a great art in handling as well as in growing them, and that no doubt the uncertain reputation some varieties had came in a measure from the uncertain knowledge of those who had been growing them. A hint of this kind we gather from the *Gardener's Chronicle*. The very kind there referred to is pronounced no good by American growers. After reading the extract we may well ask if manner of treatment has not had something to do with the bad name:

"About the middle of September I found that I was likely to have a break in the supply of dessert pears in the early part of this month, and as I did not wish this to happen I took means to prevent its taking place. I picked a half bushel basketful of large clean fruit of that excellent variety Marie Louise while quite dry, and placed them singly on a sheet of wadding in a box, then having put another sheet of wadding over the first layer of pears, another layer of the latter followed, and so on until the box was quite full, the wadding being used to exclude air. The box was then placed on the hot-water pipes in a late vinery. After it had been there for a week or ten days I examined the contents, and found, but not to my surprise, that the pears had ripened beautifully, the fruit being full of flavor and more highly colored—that is, of a clearer and deeper yellow than I have ever known them to be when ripened in a cool fruit-room. Since then I have treated several lots of Marie Louise, of which variety we have a large quantity, in the same manner, with the best results. Fruits of this variety which we have harvested this week are quite hard, as they will remain for some weeks longer. By this method the season of certain pears or apples fit for table may be prolonged; and when there happens to be a good supply of any variety of pear, and they are allowed to ripen on the shelves in the ordinary way in the fruit-room, the fruit cannot all be used for dessert whilst good, consequently it must either be sold or otherwise disposed of, but which, by following the artificial process of ripening, could have been consumed weeks previously."

PACKING PEARS.—The French, who export more pears than any other nation, cover the inside of the boxes with spongy paper or dry moss, which absorbs the moisture. Each pear is then wrapped in soft paper, and placed in layers in the boxes, the largest and least mature in the bottom, filling all interstices with the dry moss. Thus, they will keep a month or more. They are so closely packed that though they cannot touch each other, all motion is prevented. If one decays the others are not harmed.—*Gardeners' Chronicle.*

DANA'S HOVEY PEAR.—This has not always met the highest expectations. There seems necessary some of the special management to which we recently adverted. Mr. Hovey tells the *Garden* that "if gathered October 10, while quite green and hard, and put into boxes or barrels, just as store apples, it will ripen up from December 1st to the 30th, with a rich golden russet hue unlike any other pear, and possess a lusciousness of flavor unsurpassed, I might truly say, by any other fruit ever grown in our gardens; no pine-apple or banana equals it."

DOYENNE D'ETE PEAR.—The *Bulletin d'Arboriculture et Floriculture*, of Belgium, says it is getting to be a bad point in a fruit to be "large and new," and it is to the credit of this pear that it is neither. Different accounts have been given of its origin. A work published in Amsterdam in 1806, says it originated in the garden of the ci-devant Capuchin Fathers at Mons. "As is the case with all good fruits, it has a great number of synonyms;" and it quotes six—Doyenne de Juillet is the name adopted by the Editor. He claims it as the earliest of all in Belgium, except a few small and insignificant things.

THE FLEMISH BEAUTY PEAR.—This once popular variety, although by no means an old kind, is said to do well no longer anywhere. No one seems to know why. It would be worth knowing whether there is any locality in which it yet does well.

AMERICAN APPLES IN ENGLISH ORCHARDS.—Few American kinds give satisfaction there; but the Mother Apple, a Massachusetts seedling, is everywhere esteemed.

THE RIBSTONE PIPPIN APPLE.—This is the great favorite with the mass of English apple eaters. Our Newtown Pippin is also popular. As a general rule the Ribstone Pippin does not do well in our country. No doubt there are special localities where it might do as well as in the Old World. If only some one could find out this place, and grow them largely with a view to export the fruit, a fortune would follow the effort no doubt.

AMERICAN APPLES IN ENGLAND.—The value of the apples sent from America to England last year is given as $3,500,000, of which Canada furnished $451,000.

A FRENCH DISCOVERY OF A CURE FOR GRAPE MILDEW.—Lime and sulphate of copper has been found, when syringed over grapes, as a perfect cure for mildew. The solution is thus prepared: From 30 pounds to 50 pounds of lime and sulphate; each is dissolved in a barrel containing about 100 gallons of water. The operator dips a small heath broom in the liquid, and walking backwards sprinkles the vines. About 14 quarts to 1000 vines, the expense being a little over five dollars an acre.

COLD GRAPERIES.—Houses for the culture of foreign grapes, were once among the most popular of adjuncts to an amateur's garden; but the ease with which they can be had from out-door culture in California, and from other sources, has operated against their increase of late years. This is unfortunate for those who like a good thing, for certainly most of those bought in market bear no comparison in quality to the best productions of glass culture. Possibly there have been more put up than we are aware of, and we should be glad to know from our correspondents of any good graperies that have been put up in their vicinity during the past three years.

PROLIFIC CALIFORNIAN GRAPES.—Prof. Hilgard, of the University of California, experimenting with 31 kinds of European grapes, finds the Gros Verdot the most prolific, seven vines yielding 555 pounds. Forty vines of Black Hamburg gave only 1050 pounds.

WEIGHT OF GRAPES.—European grapes often take notions to produce enormous bunches—notions, we believe, grapes of American species are free from. A recent account gives a bunch of Gros Gillaume as weighing 20 pounds.

PEACH TREES IN NEW ENGLAND.—Mr. Edmund Hersey, of Hingham, Mass., says that fifty years ago good crops of peaches could be had every year in Southern and Middle New England. Today the crop is uncertain anywhere. Then the practice was to raise seedling peaches, and to grow the trees in grass. He contends that nursery practices in peach propagation and culture have weakened the vital power of the tree, which is therefore unable to resist depressing influences as formerly.

THE LARGEST PEACHES.—The Salway and the Lord Palmerston are regarded as the two largest peaches in the Old World.

BEAUTY IN A KITCHEN GARDEN.—At the December meeting of the Summit County (Ohio) Horticultural Society, Prof. Claypole stated that in England peaches, apricots and the finest plums are trained only in the way described by the essayist or some modification of the system. The high price of good fruit and the low price of labor justify Europeans in adopting methods that would not pay in Ohio. The money value of the fruit is not the only consideration. A well trained garden with trees trained as described is a most beautiful sight.

Sweet Lemons.—Sweet lemons are a favorite Mexican dainty. They are the shape, color and size of the lemons of commerce, but are sweeter than bananas.

Vegetables in Japan.—The Japanese are almost vegetarians—not so much from choice perhaps as from necessity, though the eating of flesh is in a great degree forbidden to those who are religiously faithful. Fish is not among the prohibited articles of diet. Most of the flesh prepared for food is for the infidel. In 1880 in the whole of the Empire there were but 36,000 head of cattle slaughtered—the half of which was used by the foreigner. Nine-tenths of the food used consists of vegetables. Rice is the chief article—beans, peas, and sweet potatoes are largely consumed. A fourteen-pound radish is very popular, and numerous sea weeds are used as food. They are on the whole a very healthy race.

Gum Bands in the Garden.—In the Old World Cos lettuce is popular. The leaves are blanched by tying them up with bast bands. The kinds are not much grown here as the labor of tying is too great. But India rubber bands have been introduced there which saves much of the labor.

Potato Culture.—Some carefully conducted experiments have been made in England at Chiswick, which Dr. Masters summarises as follows: 1, earthing up produces a crop of more uniform and of superior quality, even if less in quantity; 2, that bending the haulms occasions a diminished yield; 3, that a larger aggregate produce is derived from planting old tubers than from the employment of cut sets.

Sow-Thistle Spinach.—It is said that the young hearts of the sow-thistle, Sonchus oleracea, make a delicious vegetable when cooked like spinach.

Forced Strawberries and Tomatoes.—For all her efforts, Florida cannot get strawberries and tomatoes early enough for Northern epicureans, and quite a profitable trade is growing for these fruits forced. Pierpont Willson, of Vineland, New Jersey, has been in the business some years and feels encouraged. His strawberries in February brought $4.50 to $5 a quart, and tomatoes 45 cents a quart.

Dwarf Tomatoes.—In the Old World where the best tomatoes are grown by means of glass culture, the efforts with introducers of new varieties are in the direction of producing dwarf kinds. "Somebody's Dwarf," "Extra Dwarf," and similar suffixes are common in the advertisements.

Northern and Southern Sweet Corn.—We are asked why is sweet corn raised in the North sweeter than the same corn raised in the South? We will first ask, is this a fact?

Close Cutting of Asparagus.—There has been a discussion in English magazines, extending over a year, as to the proper treatment of asparagus. It is well known that unless plants have the benefit of some foliage during the year, the roots get weak and the plant dies. If we were persistently to cut every sprout of asparagus as soon as it appeared during the whole season, there would be no asparagus next year. The usual plan is to cut all that is worth cutting and leave the small stalks, technically called the "sprue" to grow on. The foliage left to keep the plants going towards the end of the season, is therefore from the small refuse stalks. So far as we can gather as the results of the English correspondence, the best results have been obtained by leaving one good stalk to grow up—say, about a foot apart in the bed—placing a stick against it as a mark to prevent accidental cutting off, and then cutting out all the small "grass." It is said that by this method enormous stalks appear next year, provided the soil is as rich as it ought to be for asparagus.

A Money Lesson from Rhubarb.—Faith is said to be the evidence of things unseen, and it is this faith that sees money where ordinary eyes cannot, that makes the fortune of many a nurseryman and market gardener. Everybody has heard of Myatt's Victoria, Myatt's Linnæus, Myatt's Prince Albert, and possibly other varieties of rhubarb. The Myatts live at Deptford in England. Over, seventy years ago, old Joseph Myatt had faith there was money in rhubarb. He sent five bunches to Deptford market, but two were brought back as unsalable. Instead of getting out of heart he sent ten bunches at the next market, and all were sold. He persevered, and finally acres on acres were produced, and the immense fortune which faith saw was realized.

NEW OR RARE FRUITS.

Empire State Grape.—Size is but a secondary quality in a bunch of grapes, but it is a good quality when the grape itself is good. This variety has a very large bunch, usually seven inches long by five wide.

York Imperial Apple.—Unless an apple gets into the hands of some large wholesale dealer, a first-class variety remains for a long time unknown. There is probably no more profitable apple than the Pennsylvania variety known as the York Imperial. It has been before the public for near half a century, and yet few have it to any extent for market purposes. We believe that the famous Baldwin is not its superior.

The Erie Blackberry.—This new blackberry is much rounder than those well known. The berries are about three and a half inches in diameter.

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FORESTRY.

COMMUNICATIONS.

PROFITS OF TIMBER CULTURE.

BY S.

Reading Secretary Edge's article on the "Cost of Fencing Timber in Pennsylvania," in the last number of the Monthly, has suggested some notes of a recent sale of locust posts at the place of Isaac G. Smock, Holmedale, New Jersey. Four thousand 5-holed fence posts were sold in one lot at forty cents apiece, besides 600 in smaller lots to other parties, at forty-five cents each. It is, I believe, the largest sale on record in that part of the State.

And the amount thus invested in fencing timber for one farm,—$1,600—is certainly a large outlay, to which must be added the transportation, cost of the rails, and labor of setting.

These posts were cut in 1878, from broken and untillable portions of the farm. The exact area is not known, but one lot of this ground which measured 37-100ths of an acre produced timber sufficient to make 1,406 5-holed fence posts, 150 garden posts, and 250 fence stakes; or in figures:

1,406 posts @ 40 cents	$562.40
150 garden posts @ 15 cents	22.50
250 stakes @ 5 cents	12.50
	$597.40

from 37-100ths of an acre, equivalent to $1,614 per acre.

The groves whence this cutting was made were planted at intervals after 1830, so that the average age of the trees was about fifty years.

The area cut over in 1878 is now covered by a luxuriant growth of handsome young trees, of which I hope to write in the near future.

Albany, N. Y., April 6, 1887.

PAULONIA IMPERIALIS.

BY CASPAR HILLER.

This tree has not received the attention that its fast growing and value as timber deserves. Its growth exceeds any other tree in this locality,—has been grown of a circumference of 72 inches in twenty-five years. Its growth in comparison with chestnut is fully 2 to 1. Its durability as posts, in a trial of twelve years, shows it to be equal to chestnut.

It is quite hardy here, where our coldest winter days are from 12° to 15° below zero; but from the fact that its blossom buds freeze in the wood at about 12°, it is doubtful if it could be relied on much further north. On account of its spreading habit and dense foliage, it is not a good tree to plant along fence rows, or along highways. It should be planted forest like, 5 to 10 feet apart, and after growing several years should be cut off at the ground, and then it will make sprouts 10 or more feet high in one season.

The trees from time to time should be thinned out, so that by the end of ten or more years, the remaining trees should be 15 or more feet apart, according to thriftiness. The thick planting at first, is for the purpose of inducing upright growth, instead of the extended side branches. Plantings made on such rough parts of the farm that hardly pay for general farm crops, would no doubt in time become the most valuable part of the farm.

The thinnings on such plantings will be no small item in paying tax bills and interest on land.

Conestoga, Lancaster Co., Pa.

[The Paulonia is very highly esteemed for its timber in Japan.—Ed. G. M.]

EDITORIAL NOTES.

UMBRELLA PINE—SCIADOPITYS VERTICILLATA. —This is the Umbrella Pine, so-called by the Japanese, and which is the literal meaning of its botanical Greek name. It may be said to be a forest tree, though it is no longer found in Japan forests; all that is known of them wild being confined to a small spot on the Japanese Island of Niphon, though it is commonly planted about Japanese temples. In the splendid collection of Japanese woods at the American Centennial there was no specimen of this, which also indicates that it is not abundant enough to be included among the lumber products of the Island. It reaches the height of 80 or 100 feet, and we should judge from the appearance of things that the quality of timber would rank with white pine.

Umbrella Pine.

Unlike white pine however, it is extremely slow in growth when young, though, as in the case with many of the fir tribe, when it gets strength it grows with fair rapidity. One of the largest specimens in Europe is said to be a fine example growing in the garden of Max Daniel Wolterbeck, at Valkenburg, near Arnheim, in Holland. It was planted where it now stands, in a very exposed situation, twenty years ago, and it is a healthy and beautifully formed tree. Moreover, it has never suffered in the least from frost or other climatal influences. Of pyramidal shape, it is nearly 13 feet high, with a circumference of a little over 21 feet. Two years ago it bore for the first time two ripe cones, and the seed produced fifteen seedlings. Last summer it bore only one ripe cone.

This is a more rapid growth than one on the writer's grounds which was raised from seeds brought from Japan by Commodore Perry's Japan exploring expedition of 1852, and is now 5 feet high. This must have been among the earliest of modern introductions from Japan, as the date of its introduction to England by Veitch is set down as 1861. Lobb introduced a plant from Java in 1853, but this subsequently died. We have no doubt there are larger ones in America from the same Perry seed than this 5-feet specimen, as the Editor distributed all his stronger ones, keeping only the weak one for himself. We shall be glad to know who has the finest in America.

Whether it will ever become a popular forestry species is a question no one can answer now, but it is undoubtedly one of the most strikingly beautiful of all hardy coniferæ. Like all other pines, the true leaves are adherent to the bark; and are seen only (in other pines) when the branches are young, or in an enervated condition. Then they are free from the stems and take the form of flattened leaves. When the growth is vigorous the union occurs. The two forms of foliage are very commonly seen in the Chinese Juniper or the common Red Cedar. In pines a secondary growth of leaves appears from the axils of the scales where a branch should spring, and these are known as pine needles. In most pines, these fascicles of needles come out at every axil in the upper parts of the branches. In the Umbrella Pine they only come out at the extreme end of the season's growth, giving the exact appearance of the frame-work of a Japan umbrella. Each of these secondary leaves seemed formed of two leaves united into one, and they have been known to split like seed leaves with a young bud growth in the cleft.

They have been very scarce and high priced in the past; but are getting now within the reach of moderate sized purses. The cut represents a plant 3 feet high.

ARBOR DAY IN PENNSYLVANIA AND NEW JERSEY.—Governor Beaver has settled April 22d as the Arbor Day for Pennsylvania, which is far too late for the largest tree planting part of the State in most years, though it does for the present season which is nearly a month later than it sometimes is. In States that have a variation of nearly 2,000 feet in altitude, two distinct dates should be given for the different sections. This has been done by the Governor of New Jersey.

LAWS FOR THE ENCOURAGEMENT OF FORESTRY. —The Legislatures of the several States, and the United States Congress, are continually enacting laws which do little more good than to pay useless Commissioners, who waste more money on ignorant reports. The true line for encouragement is to make it to the profit of owners of land to plant trees. Profits are too far off, and the risk of loss too great, in most instances. In France, taxes are in part remitted on those who plant trees, so that they simply lie out of capital and labor. The land, not eaten up by taxation, increases in value, while the trees are growing. This remission is for thirty years, the time it takes a well managed forest to come into profit. If there is a loss by storms or extra severity of heat or drouth, a further remission is made. In our country we should have to include some remuneration by loss from fire.

It is in some such direction, American legislation should be turned. We must stimulate self-interest in forestry, and insure the planters against loss.

THE YELLOW LOCUST.—It is botanically, Robinia, so named from Jean Robin, botanist to Henry the Fourth, of France, who raised it from American seeds, towards the end of the seventeenth century. It is possibly the hardest wood of any timber tree. It is almost indestructible, and hence valuable for posts. It makes rapid growth in even poor soil, and the roots do not rob the ground much. Crops can be grown nearly up to the trunk. Its defects are, that it is very attractive to an insect, the locust borer, and it is utterly wanting in elasticity, and is useless for purposes that require nails or spikes to be used. They draw out in summer.

YELLOW PINE IN ENGLAND.—The *Garden* says that what we know as white pine, Pinus Strobus, is always called yellow pine in England; and it adds:

"Fir timber of coniferous trees coming from America is distinguished in the market from Baltic timber by being termed Pine instead of Fir. The different kinds imported are known as Yellow Pine, Red Pine, White Pine or Spruce, and Pitch Pine, according to the nature of the wood, and they are mostly classed as first, second, or third quality, without, however, any distinguishing marks. The chief ports for American Pine timber are Quebec and St. John, the best Yellow Pine being shipped from the former, and the best Spruce from the latter.

CORSICAN PINE TIMBER.—As recently noted, it is as often the fault of the planter as the tree, that timber proves poor. The Corsican pine,—Pinus Laricio—has recently been condemned as a timber tree; but it seems that it is a lover of the sea-coast. In such situations, the timber is said to be good enough.

THE TULIP TREE.—This is one of the finest trees of the American forest. One, by no means as large as many that might be found, had to be cut away recently. It had been injured by a fire that caught in a stable near, some years before, on the grounds of Thomas Mackellar, Esq., of Germantown. It was found to be 120 feet high, and was eleven feet in circumference.

TREE PLANTING ON FARMS.—At the meeting of the Massachusetts Horticultural Society, held on January 8th, Levi W. Russell gave an excellent essay on tree planting. He justly says that every farmer should have his nursery of forest trees; and his boys should have the larger share in it. There is nothing about the old home, not even the well sweep and the bucket, which more endears it to the boys, when grown to manhood, than the trees which they helped to plant. We deplore the exodus of our young men from the New England homesteads to the West and other parts of the country. If we would keep them, we must make them love the land of their birth, and one factor in this work is to attach them to the soil through the practice of tree-planting.

LOCALITIES OF THE RED CEDAR.—Our excellent contemporary, the *Gardeners' Chronicle*, says that Juniperus Virginiana is "a tree found growing on low lying and swampy lands in the south-eastern parts of the United States." It is probably thinking of the White Cedar, which the description just suits. The Red Cedar is a much more northern tree, extending westwardly to the Rocky mountains, and rather affects dry, rocky, than low, swampy places.

THE MOUNT ENOS FIR.—This is the common name of Abies Cephalonica, which has proved to be one of the hardiest of the rarer firs in America. The following account of its history is from the *Garden*:

"In that interesting work, 'The Colonies,' written by the late General Sir Charles Napier when Governor of Cephalonia, much useful information is given regarding the above interesting and ornamental tree, although at the same time it may be inferred from the text that he was not at that time aware of its being a distinct and unrecognized species, for in speaking of it he says: 'It is well known to planters that firs grown in high and exposed situations possess great durability; and this is the case with firs growing on the Black Mountain, the wood of which is of the hardest texture.' The Black Mountain, of which it is a native—so-called from the dark appearance given it by these trees—runs in the interior of Cephalonia from north-west to south-east, the highest point, the ancient Mount Enos, being 5,000 feet above sea level. This latter was at one time, during the seventeenth century, covered with a dense forest of Abies Cephalonica, and from which a good revenue was obtained, but of late years, through the ravages of fire and neglect of preservation, much of the original forest has been destroyed and the name Black Mountain is now rendered, in the true sense of the word, almost meaningless, and more so by the general whitish appearance caused by the limestone formation of the rock. In these, its native haunts, it attains an average height of 60 feet with a trunk diameter of 4 feet, the largest and finest timber being produced in the gorges and valleys where partial shelter is secured, the highest rocks and ridges being cold and bleak, and in most places with but a slight coating of earth atop."

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NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

PLUM STOCKS, AND PLUM AND PEACH HYBRIDS.

BY T. V. MUNSON.

Though harnessed down to over-much heavy work, I have a chance to slip a few words edgewise into the Hybrid Plum and Plum stock discussion, so interesting to me, and made still more so by the remarks of Casper Hiller, Prof. H. E. Van Deman, E. F. Hillenmeyer, and yourself in the March number of your journal.

First. *Blackman and other Plums for Stocks.*—Having grown the Blackman for a number of years, and observed its behavior, I am perfectly satisfied in my own mind that it possesses peach blood, and behaves quite similar to the peach. It grows off very vigorously when young; attains maturity quickly, and like the peach, quickly begins to fail. It might be a step in advance of the peach as a stock, if on its own roots, but very doubtfully worth $5 per hundred as such. Happily another plum imbued with Chicasaw blood mingled with some other species—possibly some strain of P. domestica, similar to De Caradenc, as it much resembles De Caradenc in flower, leaf and habit, but in fruit greatly like Wild Goose, only earlier—it could easily be a cross of Wild Goose and De Caradenc, taking after the former in productiveness, size, quality, and color, while after the latter in flower and tree, except the bark on young twigs is not so yellow, more like Wild Goose. This is the Marianna plum. Those who know it well, will bear me out in the above and following statements. Its most remarkable characteristics are, that it grows almost as easily as willow, from cuttings. It does not sprout from the roots, as do other Chicasaw varieties; it continues to grow all the season through, and can be budded into as late or later than the peach; it carries other plums, or the peach, excellently as a stock; it is borer proof, and the leaves never "rust" as do those of the Wild Goose. The fruit has never been damaged—though stung—by curculio, along side of Wild Goose seriously injured. This variety originated in Southern Texas, and does amazingly well all through the Gulf States; and in Iowa and Illinois has endured 30° below zero with little if any apparent damage.

I almost hesitate to make the above statement, for fear I may not be believed. But I risk my reputation on it. A variety promising such wonderful capabilities, ought to be known. It is now quite well distributed, and in a few years will be abundant enough to furnish all plum stocks needed. When wood becomes abundant, I believe the stocks can be grown from these cuttings as cheaply as from the seed of other kinds.

Second. *Hybrid Plums and Peaches.*—Friend Hillenmeyer's testimony as to the Wild Goose plum hybridizing with peach, is perfectly in accord with my experience. Though I have never actually emasculated the flowers of Wild Goose and fertilized with peach pollen, yet I have evidence, which to my mind, and to every one who has seen my trees, (Prof. Van Deman so expressed himself when looking at the trees here) is as conclusive, if not more so, than the mere act of artificial impregnation having been performed. Just as conclusive as it would be to a naturalist, if he found his first mule wild in the woods, he would never conclude it to be a "sport" of either Equus caballus or E. asinus, but a distinct species, or else a hybrid. If a little further on he would find a mare (E. caballus female) with a mule foal for the first time, he would be quite sure the foal was a hybrid, and that with E. asinus, not a "sport" nor hybrid with the E. zebra or any other species of Equus. Now the following facts may the more easily be understood, and you will be able to judge whether or not my *a posteriori* argument is not as good as your *a priori* reasoning. For even if careful artificial fertilization is performed, one cannot be absolutely certain that a foreign peach, or other pollen grain, may not have been floating by in the air and alighted on the stigma at some time during the operation. The air at such season is more or less laden with such grains, undiscernable—only to the smell or through the microscope—and this seems to indicate them to be present all through the atmosphere in any region where plum and peach are blooming profusely. It would be almost an impossibility to be absolutely certain that just the desired impregnation had been performed.

Besides, there is a strong element of *a priori* reasoning on my side.

Facts.—In 1883 in my orchard stood two Wild Goose plum trees immediately surrounded by a variety of stone fruits as follows, all of which bloomed and bore abundantly that year: Alexander nearest and many other varieties of peach a little more distant, Golden Beauty plum, Weaver, Yellow Transparent plum (an early yellow pure Chicasaw with small leaves), Caddo Chief—also pure Chicasaw, early red. I gathered seeds from the two Wild Goose, carefully saved and planted alone. In Spring 1884 these germinated well, and made a fine growth from 2 to 3 feet the first year. Imagine my astonishment, to find about one-third of them much more resembling peach than any known plum, and all these were much more vigorous than any of the others the first year. About one-third of this seedling Wild Goose, had small glossy leaves, and thorny growth like the small Chicasaws. The others were quite variable, a few closely like Wild Goose, one very vigorous and beautiful, much resembling Golden Beauty in leaf and peculiar habit with its yellow-barked twigs, and late blooming habit. No fruit yet; blooming again this year. Two or three appear much like Weaver, or about midway between Wild Goose and Weaver (P. Americana).

The peach-like forms became sickly with mildew in leaf in the wet season of 1885, and are now nearly all dead. They have set bloom buds but never bloom, the buds dropping out before the time for blooming, a week or ten days, in the same way that Blackman generally does. If these are not hybrids and only "sports," why are not some of them like some other nearly related stone-fruit not growing in the vicinity of the parent?

In the fall of 1882 I gathered a quantity of wild plums from a large-treed species of wild plum, native here (P. umbellata?), and planted for stocks, on account of its vigor and sproutless roots. In the spring of 1883 the seed germinated and grew well, making some 15,000 little trees; among these three only were so peculiar, peach like, and twice as high as the others, no one could but notice them, looking over the block. They continued growing and sappy long after the others ripened their wood. The bark and leaves had decided peach-taste, while none of the others had. I planted these in my orchard to fruit. They have grown well, set full of buds three years, but have never bloomed a single flower, while other stone fruit all around have bloomed profusely. They begin already to show signs of early maturity, like peach trees. I went the summer after we gathered those plum seed and examined every tree from which we took plums, but found nothing similar, but some of them stood near an old peach orchard.

In 1885 a friend of mine here, saved quite a lot of Wild Goose plum seed from his trees, growing near a variety of peach, small-leaved Chicasaw plums, Weaver plums, and Damson plums. The seeds were planted all in one row. In the spring of 1886 they came up beautifully, some grew a foot high, some 2 feet, some 3 feet, and some 4 feet or more. The smaller ones generally resemble in leaf and habit, the small-leaved Chicasaws; the medium sizes vary much, some closely like Wild Goose, some are remarkably like the Damson plum, others are much like Weaver, and probably one-third of these and most all the larger ones are exceedingly like peach. I shall continue to observe this confounding lot of trees and report.

The Wild Goose with me and this friend always bore profusely. But how many reports do we hear of Wild Goose plum orchards being almost sterile, when not having other varieties among them!

This shows that the Wild Goose does not fertilize itself to any extent, and that even the peach will fertilize it. I have other facts bearing on this same subject, but already I have probably exceeded your patience and reasonable space.

Now, who has grown seedlings of Wild Goose plum trees standing isolated, or at a distance from other plums and from peach trees and with what results?

Now, friend Meehan, it's your time to put in with some genuine *a priori* facts supporting your theory that plums and peaches do not hybridize, but rather "sport." I once advocated that theory, but the above facts have rather knocked me off my pegs, on that ground. Also we want facts to show that these peach-like seedlings of plums are not hybrid, or if they are, that they are not infertile. I believe Prof. Van Deman to have rather the best side of this question. *Denison, Tex.*

[Our friend has mistaken the position of the Editor. There are three mental conditions connected with judgment—assent, dissent, and that which is almost persuaded but waits for more evidence. In this latter class, not in the second, are we in this hybrid question. We believe in the possibility, the probability, the almost certainty, that the peach and plum will cross and produce hybrids. We are not willing to assent that the very strong circumstances presented by Mr. D. constitute the absolute certainty which true science demands.

And we say this, not from any *a priori* reasoning, but from the *a posteriori* reasoning adduced by experience in other cases.

For instance: we found in a bed of Halesia tetraptera seedlings, a plant with the leaves of an apple tree. We are sure ninety per cent. of casual observers, if not the whole hundred, would say in passing, "there is a young apple tree growing among the Snowdrop trees." The tree was saved. Its habit of growth is not like an ordinary Halesia, but like an apple tree. When it bloomed, the flowers had not the tubular base like a characteristic Halesia, but it is cup shaped, just like the flower of an apple tree, and then it is "sterile just like a mule should be," as our friends would say. These seeds were all gathered from one tree near Germantown. There is one tree flowering of Halesia diptera, some twelve miles away, but no one would suggest an hybrid from this parentage. There is no other kind of Halesia within a thousand miles, or anywhere for it to hybridize with.

Distinguished botanists who have seen it, concur in opinion, that if the plant had been found wild, it possibly might have been used to establish a new genus.

The botanist with his knowledge of the limitations in nature would not agree with the one hundred common observers that this was a hybrid between the Halesia and an apple. His evidence would be considered of the *a priori* order. Our evidence is of the posterior character. We have the facts which lead up to the case.

It is because we have the actual facts in numberless other cases, of the wonderful power of bud variation in nature, that we prefer to be regarded as almost persuaded, rather than an absolute believer in these easy mixtures.—Ed. G. M.]

WISCONSIN ORCHIDS.

BY JOHN H. DUNLAP.

Allow me to say a few words to your readers on the subject of cultivating our native orchidaceæ, which can be so easily procured and transplanted into the garden, and when once planted they give a handsome return of beautiful flowers of delightful fragrance. In order to grow them well, and insure success, it will be necessary to select a rather shady border and dig it out to a depth of 18 inches, putting a layer of old wood at the bottom. Cover up the wood with a load of moss, found in all tamarack swamps, and fill up the bed with soil from a reclaimed swamp. Leave a place at one end to be made entirely of moss, for there are some that will grow in nothing else.

The next thing is to collect the plants. This would not be difficult to any one living in Milwaukee, as many of them could be found within the city limits, and all of them within a few miles, except Calypso borealis. The first up in the spring is Orchis spectabilis. This fragrant beauty is to be found anywhere in shady woods, where the soil is rich and moist. Arethusa bulbosa, and Pogonia ophioglosioides grows in moss and nothing else; so keep them in that part of your bed that is prepared for them. They are very beautiful when in quantity. Calopogon pulchella grows in rich black soil, and far exceeds in beauty many of the tropical Orchis that are grown by Orchis growers. The Habenarias require various kinds of soil. The following grow on loamy soil: H. orbiculata, H. Hookeri, H. leucophæa, and H. lacera. But the most desirable for border flowers are H. fimbriata, H. psycodes, which are seldom equalled for beauty and fragrance. They require moist, rich black soil. The other species growing here are H. virescens, H. viridis, H. hyperborea, and H. dilatata. They are all fragrant, but of no beauty. Calypso borealis is very scarce in this State, and if you can procure it, plant it in a box of moss by itself. It must never be dry or frozen. It is very curious to see it make its next season's blooming bulbs after it has done flowering. Cypripedium parviflora grows in loamy soil; C. pubescens grows in shady woods; C. spectabilis grows in wet willow marshes, but does fine in any good garden soil; C. acaule and C. arietinum grow in moss; C. candidum wants to have the full influence of light and heat, a regular prairie plant growing in large quantities near swales. Spiranthes cernua and S. latifolia grow in large quantities in rich black muck. This includes all the Wisconsin Orchis worth cultivating for their beauty and fragrance. We have Goodyera repens, Listera cordata, Microstylis monophyllus, Liparis liliifolia, Aplectrum hyemale, but they are of no great beauty and will only be interesting to botanists. The above lists are well worth the labor and attention of any amateur. *Milwaukee, Wis.*

THE ENGLISH SPARROW—PASSER DOMESTICUS.

BY PROF. S. S. RATHVON.

Whatever this subject of the feathered kingdom may be, or may not be, in its relations to the insect world; or whatever insects, insects' eggs, or insect larvæ it may destroy, or may not destroy, there is one characteristic, however, that must not be overlooked or forgotten; namely, it is a "Finch," and, normally, it possesses the tastes, habits, likes, and dislikes of a finch. There is a parallel line of comparison that runs through the entire classes of mammals and birds, wherein the feeding habits of the one are represented in the other. These analogies were long ago pointed out by Linnæus, and, notwithstanding there are intermediate types, in which there are interruptions of the general rule, or deviations through necessity or domestication, yet, in the wild or normal states of these animals, they are true to their instinctive impulses. The fruit-eaters are represented by the monkeys and the parrots; the flesh-eaters by the tigers and the falcons; the carrion-eaters by the hyenas and the vultures; the insect-eaters by the ant-eaters and the swallows; the seed-eaters by the field-mice and the sparrows: those that browse in the deserts are represented by the camels and the ostriches; and the fish-eaters, by the seals and the penguins. This parallel of comparison might be carried out to an immense extent, even including the insect world, but the foregoing is sufficient for illustration. The sparrows then are seed-eaters, and belong to the great family Fringillidæ, or "Finches," and normally are imbued with the qualities of finches. They all possess short, stout, pyramidical bills, suitable to plucking seeds and divesting them of their hulls. Their bills have not the form and flexibility of the "creepers," the "sylvias," and the "musicapas," (fly-catchers) that so industriously canvass the branches of trees and shrubbery in pursuit of the smaller insects, their larvæ, and their eggs; nor the straight boring bills of the "sap-suckers," that so instinctively detect insects under the bark of trees; nor yet the wide-gaping mouths of the swallows and the "goat-suckers" that so deftly capture their prey "on the wing." In short, they are finches; and, although under stress of circumstances they may occasionally appropriate insects, it is exceptional to their natural characters. The most prominent exhibition of the sparrows' willingness to feed on insects occurred during the advent of the seventeen-year-cicada, in the summer of 1885. In many cases they manifested a decided partiality for them. But that was not a very extraordinary phenomenon, for the same partiality was manifested by chickens, ducks, turkeys, skunks, dogs, cats, pigs, and other animals. It only illustrates that there is something about the young cicada, when it first comes out of the ground that is very pleasant to the taste of these animals; and no intelligent person would class them with the specific insectivora on that account. This partiality of many animals for the young cicada no doubt led the ancient Greeks to make these insects an article of food, and Aristotle said: "When the larva is grown in the earth and becomes a pupa, it is the sweetest." In fact, the sparrow can't help that it is a finch any more than it can help that it was brought to America to eat up our "fuzzy" caterpillars. It was created a finch, and in the order of nature it no doubt performs all the functions and uses pertaining to the great family of finches. The "wisdom-chests" of our country have perpetrated a blunder in introducing the sparrow here, for the purpose they had in view. And now, since it is here, it has become more conspicuous for what it don't do as an insect scavenger, than for what it does do; and for this cause the tide of popular opinion is beginning to run against it. Our native finches never created any special alarm. It is true they never had the impudence and pugnacity of the English Sparrow, but in proportion to their numbers they probably devoured about as much, whether seeds or insects, as their foreign congeners do.

In discussing the characteristics of the English Sparrow, we should "nothing extenuate or aught set down in malice," and in the spirit of this quotation it may be said, without much qualification, that it is of little or no use to us whatever; its place could be better—or at least as well—supplied by any of our native finches. If ever the English Sparrow had an insectivorous propensity, either acquired or inherited, before it reached America, that propensity has become obliterated through degeneration; that is, by a return to its normal condition; at least this is the case so far as they have become denizens of villages, towns, and cities. If they have become demoralized as insect scavengers, that demoralization is largely due to the reception they have met with by the citizens of those places. Notwithstanding an occasional moan of complaint against their debudding of fruit trees and shrubbery in the early spring, there has been a large amount of sympathy bestowed upon them. They remain with us all winter, when not another bird is to be seen; and with most people—especially children—such birds bear with them a cheerful presence. Hence, everybody feeds them, perhaps not always intentionally, but at least incidentally. Many families habitually shake their table linen three times a day in their back yards and gardens, and the sparrows soon detect who are the most liberal in this respect. A large number live on the street, and eke out a livelihood by exploring the fæces of animals, and also appropriating a multitude of "tid-bits" that they incidentally find elsewhere.

I do not think, however, that the absence of our native birds in this community is altogether due to the presence of the sparrows. That opinion needs a special qualification, even if it is true in some respects. According to my own personal observation, within the past ten or twelve years, the wren, the social-sparrow, the song-sparrow, the blue-bird, the cat-bird, the king-bird, and even the swift, or chimney-swallow, have all, or nearly all, dispeared from the northern portion of Lancaster city; but this may be as much due to the expansion of the city and building improvements—the tearing down of old frame buildings and rearing up new brick ones—as to the presence of the English Sparrow. The swifts, for instance, are in the habit of building their nests and raising their broods in old disused chimneys, but the new chimneys that are constructed are mere narrow flues, for a draught to carry off the corrosive gas and dust of a coal fire; elements by no means healthful to young birds. Still, a member of the Horticultural Society stated at a meeting, about a month or more ago, that he had not seen a swallow or a blackbird on his premises during the months of August and September; and another member stated to me that there was not a barn-swallow on his premises the present year; but plenty of sparrows. So far as concerns the feeding habits of these birds, it is difficult to see how a conflict could take place between them. Swallows are purely insectivorous, and take their prey on the wing, a feat that no sparrow would probably attempt.

When I said that our native species of sparrows would answer our purpose better as insect scavengers, than the English species, I based that assertion upon the fact that many of our sparrows, if not all of them—although partial to seeds—do, to a greater or less extent, feed on insects at certain periods, doubtless in spring or early summer, before seeds have yet been developed. But these insects they procure in the fields, the woods, and the meadows, where the English Sparrows might also procure them, but they prefer to "hang around" the villages and towns.

Last summer, from the 4th of July until the 10th of September, I had under observation a colony of "scale-insects" (Coccidæ), that infested a cucurbitaceous plant on our premises; also a colony of herbiverous "lady-birds" (Coccinellidæ), both of which increased largely from very small beginnings; and these I permitted to increase without molestation, for the sake of experiment, the plant being of no special value. We had also a colony of sparrows, roosting in a Wistaria, not ten feet from the infested vines; but the sparrows allowed the insects to destroy them without attempting to molest them. Perhaps no other bird would have touched them, because there are some insects that must be repulsive to birds of any species. These insects would have been easy to capture because they make no attempt to escape. I have known them also to keep just as shy of the "elm-leaf beetles," when the city was swarming with them. Thousands were trodden under foot on the pavements, but the sparrows "let them severely alone."

As an evidence that the sparrows do not, in any special sense, feed on the eggs of insects, caterpillars of all kinds—especially the "fall web-worms"—were very numerous, and very destructive to the foliage of trees last summer. Some of the eggs of these insects remain on the trees all winter, and others are only deposited when the trees begin to foliate; but, from the fact that the caterpillars were here in abundance, we have a right to infer that the sparrows did not destroy the eggs, and that there were no other birds to do it for them. Indeed I don't think they would bother with such microscopic game; they want something larger and more substantial. Just opposite my window,

I saw one some days ago, on a kitchen roof, wrestling most vigorously with about 2 inches of pretzel, and he never relinquished it until he had reduced it to moieties small enough to swallow; nor would he share it with others.

A citizen of Chicago stated some days ago that the sparrows were doing a "good thing" for that city—they were eating up the spiders. That's bad. Spiders are carnivorous, and feed on various kinds of flies, wasps (some wasps "turn the tables" and feed on spiders), butterflies, moths, aphids, bark lice, and various other noxious insects.

To sum up then, the English Sparrow is doing about all, as a destroyer of insects, that his nature will permit him to do; or, as we can reasonably expect him to do. And unless he is detected in the perpetration of some* positive evil, we may afford to tolerate him as a gastronomical contribution to the table. *Lancaster, Pa.*

THE COTYLEDONS OF THE PEACH.

BY M. D.

Young peach seedlings are quite common on the rubbishy margins of the streets of Jacksonville, Florida. One of these, several inches in height, was pulled up not long since and its pale stem's base was found to possess roots above the dicotyledonous leaves. A second plant examined had three dicotyledonous leaves arranged and appearing somewhat like the wings and boat-like keel of a papilionaceous flower. A third specimen had had two stems, two attempts to grow upward, destroyed, eaten away by bird or four-footed beast, whilst a third stem had reached a height of three inches without harm.

This last and the second effort had been made from the axils of the drupe leaves and a fourth and fifth bud were starting from the axils of the first two undestroyed buds, below the budless end of stem No. 2. A plant whose dicotyledonous leaves remain buried, or frequently fail to come to the surface, certainly has many more chances for life than where the said leaves are thrust well upward into view.

[The peach offers interesting studies in Cotyledons. It will be found on a close examination, that they are alternate, and not opposite, as we suppose such seed leaves to be.—Ed. G. M.]

EDITORIAL NOTES.

Late Frosts in Georgia.—There was frost in Savannah on April 1st, sufficient to make ice on buckets of water—about 31°—and large numbers of cucumbers, beans, and other early vegetable plants of the tender species, were cut to the ground. Pears and plums that had set their fruits, suffered much from the very unusual late freeze, and the crop of such fruits will be short.

Celery Fungus.—In the Eastern States the larva of the celery fly is a great foe to the culture of this vegetable. Under its attacks the edges of the leaflets are browned as if burned. The plants only grow weakly when subject to these troubles. Mr. B. T. Galloway in the *Botanical Gazette* says that at Columbia, Missouri, the plant also suffers much from the attack of a small parasitic fungus, which attacks the leaves in July, disappearing in September. It is called Cercospora Apii. Moisture and bright sunlight seem necessary to the growth of this fungus parasite. The germinating bodies (conidia) sprout in three hours in sunshine after the leaves have been moistened.

The Early Flowering Chrysanthemums.—The new race of Chrysanthemums flower in August in England. Our gardens are all ablaze with floral beauty at that season, and we do not know that chrysanthemums in August would meet a long felt want—as advertisers express it—but there might be many cases where these early chrysanthemums might be very desirable.

Cause of Summer Thunder Showers.—Sohneke states that the electricity which is discharged during a thunder-storm is produced by the friction of water and ice; that is, that the ice is electrified by friction of water. Just before a thunder-storm water-clouds (cumuli), and ice-clouds (cirri, cirrostrati), appear simultaneously in

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*Among the published statements in regard to the sparrows attacking, driving off, and even killing other birds, I can now only lay my hand on the following from *Forest and Stream*, for April last. A correspondent states that while in Erie, Pa., he and a score of other people witnessed the attack of a number of sparrows on a robin, in a public park: "One afternoon while sitting there, I noticed a robin singing on a tree. Soon a sparrow stuck his head out of a box and began scolding. Finding that did not stop the song, he sounded his war cry, and soon was surrounded by others of his clan, when a pitched battle was immediately engaged in and carried on with such vigor that they drove the robin to the ground, and by picking and flying against him on all sides, soon reduced him to submission. When we drove the sparrows away, the robin was so badly used up he could neither stand or fly, and was carried off by one of the spectators." The same correspondent says: "On another occasion I heard a great commotion among the sparrows in our yard, and looking out I saw them attack one of their own species that had a broken leg, and pick it to death." This latter is perhaps only a species of heathenism that perhaps prevails among all fowls to some extent. I have seen a number of chickens attack another of their own brood that had a broken head, and pick it to death, even swallowing its brain. The first case above, if authenticated, would constitute one of the positive evils which we should not tolerate, if the power exists to prevent it.

the sky. The friction of these particles of ice and water is a sufficient cause of the electricity which is generated.—*Independent.*

Water in Vegetables.—Few people have an adequate idea of the enormous amount of water that is in the various solids we eat. Dr. C. A. Goesman recently prepared the following figures for the Massachusetts Horticultural Society, of the percentage of water in 1,000 parts, that is contained in our leading fruits and vegetables :

Name.	Water.	Name.	Water.
Corn—(kernels)......	144.	Parsnip	.....
(stalk and leaves)	150.	(roots)	793.
Potato—(tubers)	750.	Artichoke	.....
(vines)	770.	(roots)	811.
Peas—(seed).........	143.	Asparagus—(stems).	.....
(vines)........	160.	(roots)	.....
Beans—(seed)	150.	(sprouts)	933.
(vines).......	160.	Common Onion......	.....
Carrots—(roots)	850.	(bulb)	860.
(leaves)....	822.	Celery................	841.
Sugar Beet—(roots).	815.	Spinage..............	923.
(leaves).	897.	Common Lettuce....	940.
White Turnip	.....	Head Lettuce	943.
(roots)........	920.	Roman Lettuce......	925.
(leaves)......	898.	Cucumber	956.
Swedish Turnip	.....	Pumpkin	900.
(roots)........	870.	Rhubarb.............	.....
(leaves)......	884.	(roots).......	743.5
White Cabbage	.....	(stem and leaves)	916.7
(head)	900.	Apples...............	831.
(roots)	890.	Pears	831.
Savoyan Cabbage ...	.....	Cherries	825.
(head)........	871.	Plums	838.
Cauliflower	904.	Gooseberries	903.
Horse Radish........	.....	Strawberries	902.
(roots)	767.	Grapes...............	830.
Spanish Radish......	.....	(seeds).......	110.
(roots)	933.		

Pruning to Promote Vigor.—The English gardening periodicals are going over a question, long ago settled we think by their American brethren, whether or not pruning promotes vigor. One of the best affirmative writers puts his argument in this way :

> "Supposing twelve pigs are feeding out of one trough, and eleven of them are removed or killed, would there not be many times more food for the one pig left, though nothing more were put in the trough ? The illustration may not be either elegant or absolutely correct, but it is near enough for the purpose. The pruner, by reducing the buds in a wholesale way, increases the supplies for the few left, and as these ultimately appropriate the whole to their own use, they, of necessity, are better fed and become more vigorous in consequence of the reduction of mouths."

We have found in our country that the food referred to, is stored up in the wood of the tree or shrub, and so far as that goes, the illustration holds good. For that particular growing season, there is a vigorous push. Every body knows this.

But the strong point on the other side is, that an innumerable number of roots die after a severe pruning of the branches, and the permanent vigor of the tree is seriously checked. We have only to look at the "topped" street tree, and the street tree "untopped;" the willow trunk when cut for osiers, and the one left to grow ; the Osage orange or other tree in a regularly pruned hedge, and the Osage left to grow up without pruning ; any one can see after a few years, that the unpruned trees make trunks of double the size of the pruned ones, and can have no hesitation in deciding that pruning is opposed to vigor, in the full meaning of the term. The temporary strength of the illustration has never been doubted.

Age of Bearing of a Coffee Plant.—Where the conditions suit, the coffee tree is not many years in coming into bearing. Near Lake Nyanza in Central Africa from one plant set out eight years ago, there were produced last year seventy bags of the finest coffee.

SCRAPS AND QUERIES.

Rubus trivialis—The Southern Dewberry.—This is the name of the pretty blackberry received from a Savannah, Ga., correspondent, who says : "I send you specimens of blackberry blooms, you will see they are purplish, or rose-colored, a quite common thing about here ; and I am told it is so every season—they are quite showy with their suffusions of roseate and pinkish flowers."

It is a remarkably ornamental plant and deserves cultivation in Northern gardens, where it would make a very pretty trellis plant.

Sweet Scented Persian Cyclamens.—Mr. Herbert Harris, Halifax, Nova Scotia, writes : "I post to you a few flowers of a very fragrant 'Cyclamen Persicum.' I know of Cyclamens (some) being sweet scented, but never saw so fine a variety so highly scented. The plant has had nearly one hundred blooms on it. Hope the specimens will come to you in good order."

[These were found charmingly fragrant. We have noted recently that there is a vast difference between plants as regards the fragrance of their flowers. Would it not be as well to try to get out a specially fragrant race ?—Ed. G. M.]

Hybrid Plums.—Mr. Munson kindly sends us from Denison, Texas, flowering branches of the Blackman and other varieties supposed to be hybrids. To our mind they are all simply sports —the Blackman indeed may be termed a monstrosity—with no sign of hybridity about them.

The plum may be always distinguished from the peach by precocious activity in the cork-cells, which results in the sloughing off of the external cuticle before the branch is a full year old, giving a plum branch a silvery tint. All of these had this character, and we should call them all true plums. The Blackman is a singular monstrosity. The sepals and petals are little more than bud scales, while the centre of the flower is made up of what appears to be a mass of independent carpels, that one might take for pistils if they were in some other genus of plants. They are really intermediates between stamens and pistils, and would, we think, very much interest vegetable teratologists. There appear to be two of these abnormal flowers in each flower bud, as is common to plums. We see nothing to suggest any hybridization with a peach.

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

NOTES ON A TRIP FROM FLORIDA TO MASSACHUSETTS.

BY DR. L. W. PUFFER.

You will remember that last year I gave a brief account of experiments with the foreign grape at Belleview, Fla. In a recent visit, March 25th, I again examined the vines of Mr. Penfield, and found them, considering the sterile soil, vigorous and healthy. The new growth, some two feet or more, was showing fruit, and I was told that last year they also had fruit, although it was the same year they were set. So far as I could ascertain, no one in the vicinity had ever had experience in the culture of the foreign grape under glass, or in Europe or California. I was told that a neighbor of Mr. Penfield had succeeded in grafting the foreign grape on the native vines, that there were few failures, and the grafted vines fruited well. My visit was too hurried to enable me to make a personal examination, which I had intended to do. There are many hundred acres of groves, and since I was here, one year ago, 75 acres more have been set with orange trees, also 38 acres to strawberries. Notwithstanding the cold weather of last year and some slight cold spells this, the development of the State has gone steadily forward, and at no previous time have the prospects for the future seemed more encouraging. With all the talk about booms, and the denunciation against the State, the best answer is perhaps to quote the growth of Jacksonville which in 1886 showed a gain of 65 per cent. in her population. Her streets have been paved, many large brick blocks erected and with the exception of the beautiful Southern trees, and fruits, the city has a Northern aspect. The magnolias, live and water oaks, with the palms and Southern moss are unique and satisfying. On my return north, March 30th, I found that the market gardeners, or truck men, were having particularly hard times, the frost having caused a loss of more than $1,000,000 to the early vegetables in and around Charleston, S. C. This coming so soon after the earthquake, and to a people already impoverished, is peculiarly unfortunate. While waiting an hour for a train at the Ashley Junction, S. C., we encounter at least two dozen negro children of ages ranging from 5 to 15 with hands full of the beautiful Zephyranthes Atamasco, for sale. At a request for roots, like arrows from a bow four started out and in ten minutes returned with several dozen. Their financial hunger was appeased by the payment of a nickel each and both parties were pleased with the bargain. I spent a day in Baltimore and made a brief visit to the large and tasty grounds of A. Brackenridge & Co. We saw some particularly fine specimens of the various kinds of Retinospora, a plant whose rare beauty and entire hardiness should make it more common than it is. We had the luxury of seeing some 50,000, more or less, orchids. The whole stock appeared healthy and suggested the future possibilities in the various localities in the United States in the cultivation of this most exquisite creation of the floral world. People do not keep such a stock unless there is a demand for it, and we predict a lasting love for the cultivation of this wonderful exotic. Baltimore is a beautiful city, and we noted with surprise some pear trees 30 to 40 feet high, with trunks from 12 to 18 inches in diameter. There is nothing that I have ever seen in New

England like it. Then too the various trees seem to grow better there than in New England and probably they may be more free from insect enemies. There is a neatness everywhere and plan about the buildings, particularly the dwellings, not to be seen in any other city that I have visited, that is very grateful to the eye, and adds much to the enjoyment of the visitor.

[The wife of the Editor of this magazine, who has an experience of thousands of miles of travel over this continent, contends that Jacksonville may claim in its Windsor Hotel, one of the best appointed in the United States. It is pleasant to hear from all quarters of the growing prosperity of this distant portion of the country.—Ed. G. M.]

EDITORIAL NOTES.

THOSE UGLY WEEDS.—Lucy Larcom says in *Flowers of the Fallow :*

> "I like those plants that you call weeds,
>   Sedge, hardhack, mullin, yarrow.
> That knit their roots and sift their seeds
> Where any grassy wheel-track leads
>   Through country by-ways narrow.
> They fringe the rugged hillside farms
>   Grown old with cultivation,
> With such wild wealth of rustic charms
> As bloomed in Nature's matron arms
>   The first days of creation."

PHILADELPHIA PRICES IN APRIL.—It may serve as a guide to those at a distance, who wish to grow for the Philadelphia market, to note the prices which fruits and vegetables brought at retail the first week in April: cucumbers, 15 to 20 cents; egg plants, 40 to 50 cents; Southern spinach, 30 cents half-peck; kale, 20 cents half-peck; lettuce, 5 to 12 cents each; water cress, 5 cents a bunch; Southern potatoes, 30 to 40 cents; celery about 35 cents each; cabbage, from 15 to 35 cents; imported German, 13 to 35 cents; radish, 5 cents a bunch; tomatoes, 50 to 60 cents a quart; onions, 15 cents a quart; rhubarb, 25 cents per three bunches; asparagus, 85 cents to $1 a bunch.

CHRISTMAS TREES AND GREENS.—Of the thousands of trees that are sold in Philadelphia, most are Black Spruce from the mountains of north-east Pennsylvania. There are a few Pinus rigida, or Pitch Pine, with an occasional Red Cedar from New Jersey. From the refuse of country nurseries there are a few Norway Spruce, White Pine, and Balsam Fir. The latter wholesaled at from $20 to $25 per 100. They ran from 7 to 10 feet high. The native trees brought about $40, and the very large ones about $70. The retail prices are about double, so as to compensate the risk of "stock left on hand."

The wreathing is made of Holly (Ilex opaca), the berries of the deciduous Holly or Black Alder (Ilex verticillata) doing duty for the regular berries of the evergreen Holly. "Pine wreathing" is Lycopodium dendroideum—and "crowfoot wreathing," which is Lycopodium complanatum—these used to be called Ground Pine, and (the latter) festoon Ground Pine, but common names change every year or two. Then the Laurel (Kalmia latifolia) and the Teaberry (Gaultheria procumbens) complete the list of wreathing materials. Mistletoe branches are growing in favor, and a quantity with pure white berries, coming in barrels from Europe, met with ready sales.

DECLINE OF GARDENING TASTE IN THE OLD WORLD.—The English papers complain that by reason of the more even distribution of wealth, the number of first-class places capable and willing to employ the highly educated gardeners of older times, are rapidly declining, and that numbers of the best gardeners are looking for employment in other fields. At one time to be a gentleman's gardener, was about the best course for a person of moderate means to rise in the intelligent social scale. Now they become engineers, physicians, clerks, and with these numerous channels open to them in increasing opportunities, the fading opportunities for advancement through gardening, offer little attraction. Commercial gardening offers some inducements yet for talent, but the fear is that when all horticulturists come to include chiefly those who have something to sell, where will the buyers be? The conclusion a recent intelligent writer reaches, is, that even those whose only interest in horticulture is the commercial one, should at least interest themselves in promoting the love of gardening, for its own sake, amongst others.

COMMON NAMES OF HOUSTONIA CŒRULEA.—By a ticket to an old specimen in the herbarium of the Academy of Natural Sciences, of Philadelphia, it appears that the early common name about Philadelphia was Quaker Girls. This has been changed in modern times to Quaker Bonnets. In other places it goes by the name of Bluetts.

GOLDEN BELL.—Common names are very nice when expressive, and Golden Bell, first suggested by A. J. Downing for the Forsythia, is a very good name. Botanically, there is but one species, Forsythia viridissima; F. suspensa and F. Fortunei being all forms of one thing. The two former are, however, so distinct as to be well worth preserving under separate names. The two last have no material difference. The leaves of one are trifoliate, and entire on the other, but the two kinds are often seen on one plant.

MUM IS THE WORD FOR CHRYSANTHEMUM.—The *Journal of Horticulture* says:

> "An American writer wishes that 'the name Chrysanthemum could be shortened, as it causes some trouble to those who are not familiar with botanical names. We hear them called Cassanthiums, Chrysantheums, as well as Chrysantumbums, Chrysants and Chryschianthems.' To these might be added a daring abbreviation in common use amongst English growers—namely, 'the Mums.'"

As they are jovial flowers about Christmas time, some American ladies call them Christmas Anthems.

CULTURE OF THE BACTERIAN FIRE-BLIGHT.—In his experiments with the culture of the Micrococcus amylovorus, which Prof. Arthur believes to cause the fire-blight in the pear, he found it required a large supply of water for its best development—a fact, observes the Professor, which has a practical bearing.

In examining twigs of the Bartlett pear on April 30th, when they had flower buds on them, he found 68.7 per cent. of water. Twigs of the Seckel pear had 67.3. The half-grown fruit, taken the first week in July 79.3 for the Bartlett and 77 for the Seckel. Professor Arthur, noting that the Bartlett is believed to be more susceptible to the fire-blight than the Seckel, believes "these numbers give some support to the view that succulency and the strength of the disease are directly related." We cannot conceive, however, how less than two parts in a hundred can have any material effect on what we term succulency, nor is it clear why, if the germs of Micrococcus will sprout in a single drop of water, a whole tumbler of water should have any greater influence in aiding the process.

CLASSICAL NOTES ON THE VIOLET.—Lady Wilkinson, in her book on flowers, gives many interesting particulars concerning the violet. It must have been greatly in favor with the Romans, she tells us, as they called their days set apart for decking graves "*Dies Violaris.*" Pliny thought that violets were of medicinal value, and advised that garlands of them should be worn on the head. Different varieties of this flower grow in many parts of America, Palestine, China, Japan, Europe, and even on the Swiss Alps, and the ruins of the Colosseum at Rome. Its praises, we are told, have been written in many languages. Aboo Rumi, an Eastern poet, says, "it is not a flower; it is an emerald, bearing a purple gem." The Arabs, it is said, compare the eye of a beautiful woman to a violet. Homer speaks of Venus as crowned with violets, and Theocritus thought that these flowers were specially desirable for wreaths. Aristophanes spoke of Athens as "violet crowned," and Dioscorides makes mention of the flower. In modern times this favorite, with its meanings of truth, modesty, and love, is spoken of by Shelley, in these lines:

> "Lilies for a bridal bed,
> Roses for a matron's head,
> Violets for a maiden dead."

—*The Open Court*, a Chicago magazine.

POMOLOGY IN GERMANY THREE HUNDRED YEARS AGO.—When we look at the numerous new varieties of strawberries, raspberries and other fruits which can be raised from seeds and fruited within a year or two, and contrast them with varieties known to us half a century ago, we cannot see that improvement has kept pace with novelty in these new introductions. Old kinds are said to depreciate, and new ones are necessary to keep up the standard, rather than to improve it—and possibly the natural love of mankind for something new has had a great deal to do with the disappearance of many a good old thing before there was much degeneration about it.

Turning over the old books in the Editor's library we happened on John Bauhin's *Historiæ fontis et balnei admirabilis Bollensis*, who, he says, was "Physician to the Duke of Wurtemberg." It was published in 1598. There are figures and descriptions of 60 named varieties of apples, and 28 of pears, all from kinds growing in that part of Germany. These figures and descriptions remind us so strongly of those of the present day, that we can trace little novelty except the names. They covered the whole season till apples came again and were as large and beautiful as anything we have. Even the names—Weinapffel, Janitapffel, and others have no novelty, though perhaps not referring to modern fruits with this name.

Even in the number of kinds, we boast of 2,000 varieties of apples. If John Bauhin could find 60 varieties in a small quarter of Wurtemberg at that time, we fancy if he had the same means of communicating with the rest of the world by mail, rail and steamer as we have, he might have come up to pretty near where we are. It is well enough to praise ourselves—but we may do some justice to the old folks at the same time.

Fancher Creek Nursery, near Fresno, California.—Mr. Gustav Eisen, who with his superior intelligence and energy has made this nursery world-renowned, retires from its management. Mr. F. Roeding is the new proprietor.

The Princess of the Sandwich Islands.—Mrs. Claghorn — Princess Like-Like — who recently sacrificed herself in order to appease the devil who is supposed to have caused the volcanic eruption at Mauna-Loa, was a great lover of flowers, and her death in this pathetic manner is sad to think of. The religion of the Sandwich Islanders demanded a sacrifice of a Royal Princess, and Mrs. Claghorn offered herself. Her sacrifice according to their religion was by starvation. She lingered twenty days, and was placed in the Royal Mausoleum on the 28th of February. Singularly enough, as foretold by the priests, the volcano ceased to flow on the day she died.

It is flowing again, and the demon, Pele, we suppose is demanding another victim. We only hope it will not be a good flower-lover like Mrs. Claghorn next time.

Senator Mitchell, of Wisconsin. — This gentleman, whose death is just announced, was a munificent patron of horticulture. His residence at Milwaukee, when the Editor saw it some years ago, had around it extensive ranges of glass for fruit and flower culture, and must have been among the earliest in the west on this beautiful and princely scale.

James Powell.—Mr. James Powell, of the old-time florists of Philadelphia, died at New Centreville, near Philadelphia, on the 17th of April, in his 73rd year. Mr. P. was a highly educated gardener, a native of England, and was invited to settle in this country some fifty years ago, by the late Robert Buist, with whom he lived as foreman until starting business for himself. He was the brother of Mr. Powell, who, for so many years was superintendent of the fruit department in the gardens of Queen Victoria at Frogmore.

Mr. P. was quite successful in his earlier, and we may say, continuous efforts to establish himself, but on several occasions his generous good nature led him to endorse for friends, with the too common result of paying the debts himself, so that after each successful effort he would find himself finally about where he commenced. By these misfortunes he never achieved that eminence which his intelligence and worth deserved. Somewhat in retirement of late years, the younger race knew little of him, while so many of those to whom he was endeared in the past have passed away.

Grasses of North America. Vol. I.—By Prof. Beal, Professor of Botany and Forestry in Michigan Agricultural College. Published by the author, at Lansing, Mich.

There may have been a work on grasses equal to this in value, in the Old World or somewhere, but if there ever has been, it has escaped the writer's attention. It is wholly an original work—a point that is full of meaning, when we remember the high reputation of the practical man of science who writes it. It proposes to cover the whole range of intelligence relating to grasses. We have chapters on the physiology of grasses, their chemical composition, selection, improving, cultivation, management of grass lands—and, as clover has very much to do with grass lands, this also is embraced. The doings of insects, fungi, etc., are also shown up, and it is difficult for any one to conceive of a topic in connection with grasses on which he may not be enlightened by a perusal of this volume. If all flesh is grass, surely all men will be interested in the work—and in some aspect or another this is literally true. Prof. Beal has done a great work for our country in giving them this.

This one volume will not, however, yet satisfy "all men," for the feast for the botanist is yet to come. The list of all the seven hundred known grasses of North America, botanically described and classified, is yet to appear. But this will make no difference to the completeness of Vol. I. This will be just as useful to the mass of mankind, though the second volume should never come. It is a large octavo of 457 pages—and is full of excellent illustrations, many drawn by that excellent grass-man, F. Lamson Scribner.

Botanical Contributions, 1887. — By Asa Gray. The Proceedings of the American Academy of Arts and Sciences, issued March 4th, gives us notes on a number of North American plants. The pretty Californian genus Eschscholtzia is revised—the E. Californica is confined to the large-flowered perennial form. Dr. Gray enumerates eight other species. A true poppy is described—the first found native on our continent. It is named Papaver Californica. It is related to the poppy of English corn fields, Papaver Rhœas. Portulacaceous plants undergo revision, especially the Claytonias, to which the Spring Beauty belongs. A number of Malvaceæ have been overhauled, and a new genus, Horsfordia, dedicated to the brothers Horsford—one of whom, of the firm of Pringle & Horsford, must be known to many of our readers. It is between Abutilon and Sphæralcea. Six new species are described from a collection by Pringle in Chihuahua. Bouvardia gracilis, a white flowered species; Ipomœa Pringlei, a very handsome large purple flowered one, and Pentstemon rotundifolius, a perpetual flowering one, are among them. The Miscellanea refers to only fifteen species, some wholly new, and others hitherto improperly referred.

It may be inferred from the limited number of new plants in this contribution, that we are nearing the end of new discoveries on the North American continent, which, as it leaves Dr. Gray more free to work towards the completion of his synoptical flora of North America, is surely "a consummation devoutly to be wished."

The American Naturalist.—The *American Naturalist*, one of the leading exponents of American scientific progress, which has already proved its necessity by a twenty years of existence, has changed publishers, and is now issued by J. B. Lippincott Co., of Philadelphia. It is not only an exponent of American advance in scientific knowledge, but is held in high esteem all the world over. The subscription price is $4.00 per annum.

Catalogues.—Aspinwall & Treadwell, Bee Keepers' Supplies, Barrytown, N. Y.; Boomer & Boschert Press Co., Cider and Wine Machinery, Syracuse, N. Y.; Braun & Satterthwaite, Greenhouse and Nursery Stock, Denver, Col.; Curwen, John, Jr., Herbaceous, Climbing and Bedding Plants, Villa Nova, Pa.; Hale, G. H. & J. H., Small Fruits, South Glastonbury, Conn.; Heinl, John G., Floral Catalogue, Terre Haute, Ind.; Kelsey, Frederick W., Trees, Shrubs and Vines, N. Y. City; Lamb, James M., Ornamental Plants, Fayetteville, N. C.; Moon, Samuel C., Ornamental Trees, Fruits, etc., Morrisville, Pa.; Purdy, A. M., Fruit Trees and Plants, Palmyra, N. Y.; Shearer, O. R. & Co., New Globe Peach, Tuckerton, Pa.; Sheppard, E. & Sons, Plants, Shrubs, etc., Lowell, Mass.; Siebrecht & Wadley, Orchids, New and Rare Plants, also Wholesale List, N. Y. City; Smith, W. L., Wholesale Plant List, Aurora, Ill.; Underhill, E. B., Small Fruits and Vegetables Wholesale, Poughkeepsie, N. Y.; Wilson, William C., Roses, Greenhouse & Bedding Plants, N. Y. City; Woods, D. R., & Co., Trade List of Novelties, New Brighton, Pa.

SCRAPS AND QUERIES.

Pasadena, California. — A correspondent writes in raptures of Pasadena in Southern California. It is a paradise—angels and all. He found Cedars of Lebanon and Deodar Cedars, 20 to 25 feet high, and the great Sequoia and the Redwood, 15 to 20 feet high, all under successful cultivation. Of Dr. Carr's grounds but 8 years planted, the highest admiration is expressed.

Florida Notes.—A correspondent sends us the following notes: Near Ormond, Florida, one of the points of interest is the Indian burial ground at Bosarve. The road to it lies through orange groves and bananas, and is full of interest. At Silver Beach, Mr. Marsh has a plantation of pecans that are grafted on hickory stocks that are in a very promising condition. They are now in bearing condition. He uses warm artesian water for irrigating purposes. He is growing palms and other tropical plants. The Halifax River is one of the prettiest in Florida. A road has been opened to Fort White through a magnificently timbered region. At Lake City water-works by steam pumpage have been established. Tobacco raising is progressing, and Florida tobacco pronounced equal to Havana. A newspaper called the *Tobacco Plant*, has an extensive circulation, which shows the extent of the tobacco enterprise. The University of Florida has an excellent museum. It is at Lake City. Here also are the experimental gardens of Dr. Appell, he has filled up a swamp at a cost of $1,000.

Here are to be seen over 300 varieties of the choicest roses, many of them in bloom, 70 of grapes, numerous different kinds of pears, peaches, plums, quinces, figs, pomegranates, apricots, strawberries, English walnuts, a perfect wealth of flowers and plants of almost every description, among the latter specimens (names not remembered) from Africa, Asia, Southern Europe and South America.

A new industry is the collection and shipment of medicinal herbs and roots which abound in the vicinity. Among the latter may be mentioned 60,000 pounds of the "Queen's Delight" (Stillingia sylvatica) sent to Providence, R. I.

The road to Fort White passes through some of the finest timber in the world, which extensive mills at Columbia City are rapidly utilizing. Many of the stocks awaiting transportation for masts of the largest ships, or their turn at the saw, were of prodigious girth and length.

The superintendent of public schools, Prof. E. G. Parsons, also resides here, and is a gentleman of fine intelligence and scholarly attainments. His home is situated in an eight-acre grove of thrifty young pear trees of the Le Conte variety.

It has been generally conceded that the two great recommendations of the LeConte pear are, that they may be easily propagated from the cutting and were never known to blight or die back, as frequently happens to other varieties of the same fruit. But decided symptoms of this disease have appeared in Suwannee County, and reliable gentlemen said they noticed it in the groves of Madison and Tallahassee. The writer made a critical examination of Col. Blackburn's fine orchard at Live Oak, and found a half dozen of the largest bearing trees almost ruined by this disastrous blight. As many as twenty long limbs on a single stock had perished, and the bark of the main trunk was splitting and seemed to have lost its vitality.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

Pennsylvania Horticultural Society.—The Fifty-eighth Annual Exhibition will be held on the 27th, 28th, 29th and 30th of September. The premium list amounts to $700. The chrysanthemum show will follow on the 8th, 9th, 10th and 11th of November. $800 will be awarded in prizes by the Society, and $500 more by friends of the Society. Schedules may be had of Edwin Lonsdale, Secretary, Horticultural Hall, Philadelphia.

Massachusetts Horticultural Society.—At the meeting of March 19th, Mrs. Francis B. Hayes exhibited another fine collection of roses, including Mme. Gabriel Luizet, La France, Baroness Rothschild, James Comley, Magna Charta, Captain Christy, White Baroness, Merveille de Lyon, and others. Mrs. E. H. Hinds exhibited amaryllises. The exhibition was probably less than it would have been but for the grand spring exhibition, which opened on the 26th, and for which exhibitors reserved their forces.

Horticulture at the Industrial Hall at Paris.—Mr. Chas. Joly sends us a review of the exhibition of the Horticultural Department, recently, in which he notes that the plants and flowers were arranged with much more taste than usually seen in Paris exhibitions. Double cyclamens were remarkable. Early spring blooming plants, as camellias, azaleas, violets, forced lilacs, primroses, tulips, narcissus, and orchids were prominent. Truffaut Brothers made the chief display.

Chantin had the chief foliage plants and ferns. Teveque was the chief camellia man, and Regnier, the orchid. Robert had the double cyclamens. Salomon, of Thomeray, had the honors on grapes. Though railroads bring fruits from more favored parts at all seasons, dried fruits are attracting more and more attention. Vilmorin made a magnificent exhibit of seeds, Forgeot and Company, of cinerarias and bulbous plants, and their primroses were so remarkable as to receive a gold medal.

International Horticultural Company of Belgium.—The Societe L'Horticulture Internationale of Ghent, Belgium, has succeeded the famous Compagnie Continentale d'Horticulture, and propose to continue to send out to foreign countries collectors for new and beautiful plants, especially orchids, for which the old company was so famous. Messrs. J. and Lucius Linden, of Ghent, are the managers of the new company.

The magnificent work on orchids, known as "Lindenia," is to be continued. The first part of the second volume has already appeared, and contains Epidendrum atropurpureum Randii, Cypripedium Macrochilum, Stanhopea tigrinum, and Phalænopsis Sumatrana. These beautiful colored plates are on folio sheets and are magnificent works of art. The histories and descriptions are in French.

We are often asked for some work on orchids suitable for ladies to make copy paintings from. Such a work as "Lindenia" is just what is needed for this.

Royal Society of Literature (England.)—At the meeting on the 22d of March, Mr. W. Paul, the celebrated rose grower, gave an address on the literature of gardening. After the passage of the dark ages, horticulture took a wonderful leap, in which great efforts the Italians and the Dutch took the lead—the French and English then followed closely with their writings. The new era in gardening came in with the 17th century. It is however from the dawn of the present century that the best literary efforts in behalf of gardening have been made.

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Volume XXIX. JUNE, 1887. Number 342.

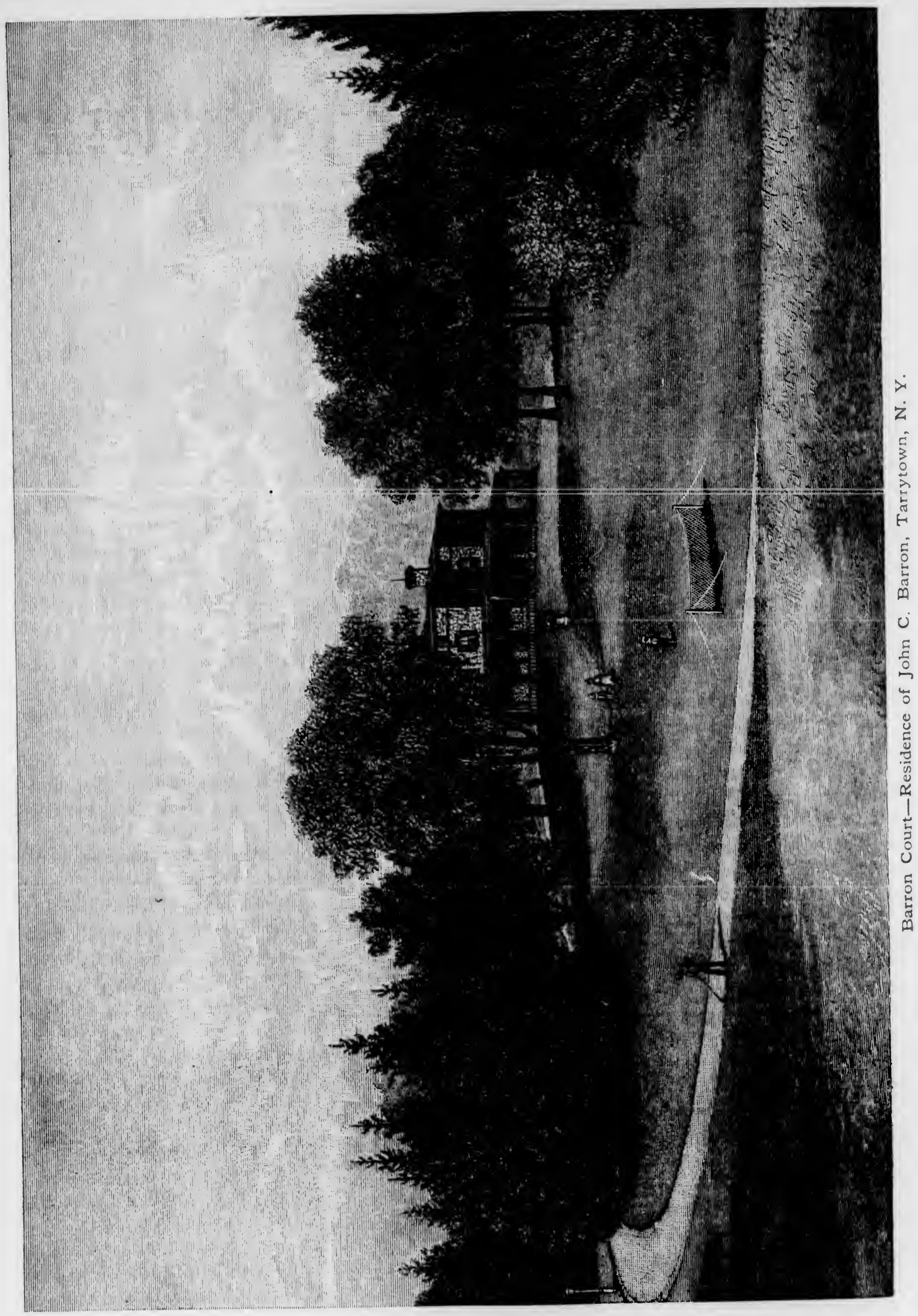
FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

A city paper recently noted that a great change was coming over the community in regard to having pleasant country homes. Just before the war for the Union, there was a growing love for the home in the country where the wealthier portion could spend their summers, while residing in the city during the winter time. The war broke up most of those who were able to enjoy this luxury. Numbers became suddenly rich, who had no previous taste for country life. These for the most part would build large and showy residences in the city, and very few cared for the country residence. Again there came the development of the railroad system, and improvements in ocean traveling by which one could go to the uttermost ends of the earth in a short time; and the winter gains were spent in summer journeying. Of late, the paper says, there has been another marked change. The railroads leading to the suburbs have brought rural scenes so near the cities that people of taste build again as they once did; and, if they are wealthy enough to afford it, "take their vacation" in the winter, and go to Florida or California, and stay quietly at home during the summer season. It is said, indeed, to be coming to be just the thing for those who have country homes, with business in the cities, to take their rests in summer there.

Just what may be the predisposing causes may be a question; but it is certain that the love of country life and country homes is more intense than it was a few years ago; and pretty country places are getting more common than they used to be.

We are the more encouraged to continue, under our seasonable hints, to make suggestions for the tasteful arrangement of country grounds. Much of the pleasure we derive from gardening is from the cultivation of a correct taste in these things. Usually about this time those who propose to build select sites, and start with the building. A point seldom considered by architects is to adapt the styles of the house to the character of the ground. But the truth is that whether a house is beautiful or not will often depend very much on the character of the spot on which it is located. A house that would be regarded as beautiful in the city, may be not beautiful in a country spot; and not beautiful simply because it is out of all character with the surroundings. Yet often the owner is left to judge from a lot of pretty pictures or plans what to select for his taste. We sail down the Rhine, and admire the castellated structures we see on its rugged hill-tops. We pronounce them beautiful.



Barron Court—Residence of John C. Barron, Tarrytown, N. Y.

But we should laugh at these buildings if they were to be set down on our broad and level prairies. For a broad topped eminence a broad two-storied building will look much more beautiful than the lofty structures; and the castellated styles should be voted wholly out of order. To illustrate this point we give here a sketch of the house and grounds of Barron Court, the residence of Dr. John C. Barron, at Tarrytown, New York. There is nothing particularly striking about the architecture. Among a lot of pretentious structures in the suburbs of our cities, it would be passed unnoticed. But on this slightly elevated plateau, and arranged as it is between distinct groups of planting, it becomes a part of a singularly beautiful and very pleasing picture. The landscape gardening has of course much to do with the pleasurable effect. The Norway Spruces are placed by themselves, and form a distinct element of variation in the picture; while these again add much to the beauty of the curve in the road which winds so gracefully around them.

In lawns that have been raised from grass seed sown the past spring, many weeds will appear. The perennial ones should be weeded by hand. The holes made by removal of roots can have a little earth put in. The creeping grasses will soon cover the bare surface. Lawns that have been cut very close for several years, will suffer much from creeping weeds, which get all the sunlight on their foliage they require to keep them healthy. Unfortunately there is no way to get rid of these but by letting the grass grow for a season, which smothers out the weeds. A good help, however, is, to sow in the fall seeds of some low growing tufty grass, which mowing does not weaken much. The Sheep Fescue, Festuca ovina, is a good one for this purpose. We are inclined to think that even for the main grass in lawn making it has some good points. So far, the Kentucky Blue Grass, Poa pratensis, has had no competitor. The good point in a first-class lawn grass is that it shall grow so stocky as to crowd out all competitors.

Trees transplanted last sping, may not be pushing into growth as rapidly as desirable. A pruning knife is a better friend in such cases than the watering pot. The last year's growth may be cut back to near where it started from. Sometimes the earth has not been packed close enough to the roots, to enable them to draw nourishment properly. In such cases a packing or pounding with a heavy paving rammer, is better than a good watering. When a good watering seems necessary, a basin should be made by draining the earth away from the trunk, and water filled in lightly so as not to press the earth together too tightly by the force of the water. An essential feature of good healthy soil is to be porous. If the particles be packed tightly together, so as to obliterate the minute air spaces that render it porous, earth dries out all the faster for having been watered.

COMMUNICATIONS.

PINUS PUNGENS—THE TABLE MOUNTAIN PINE.

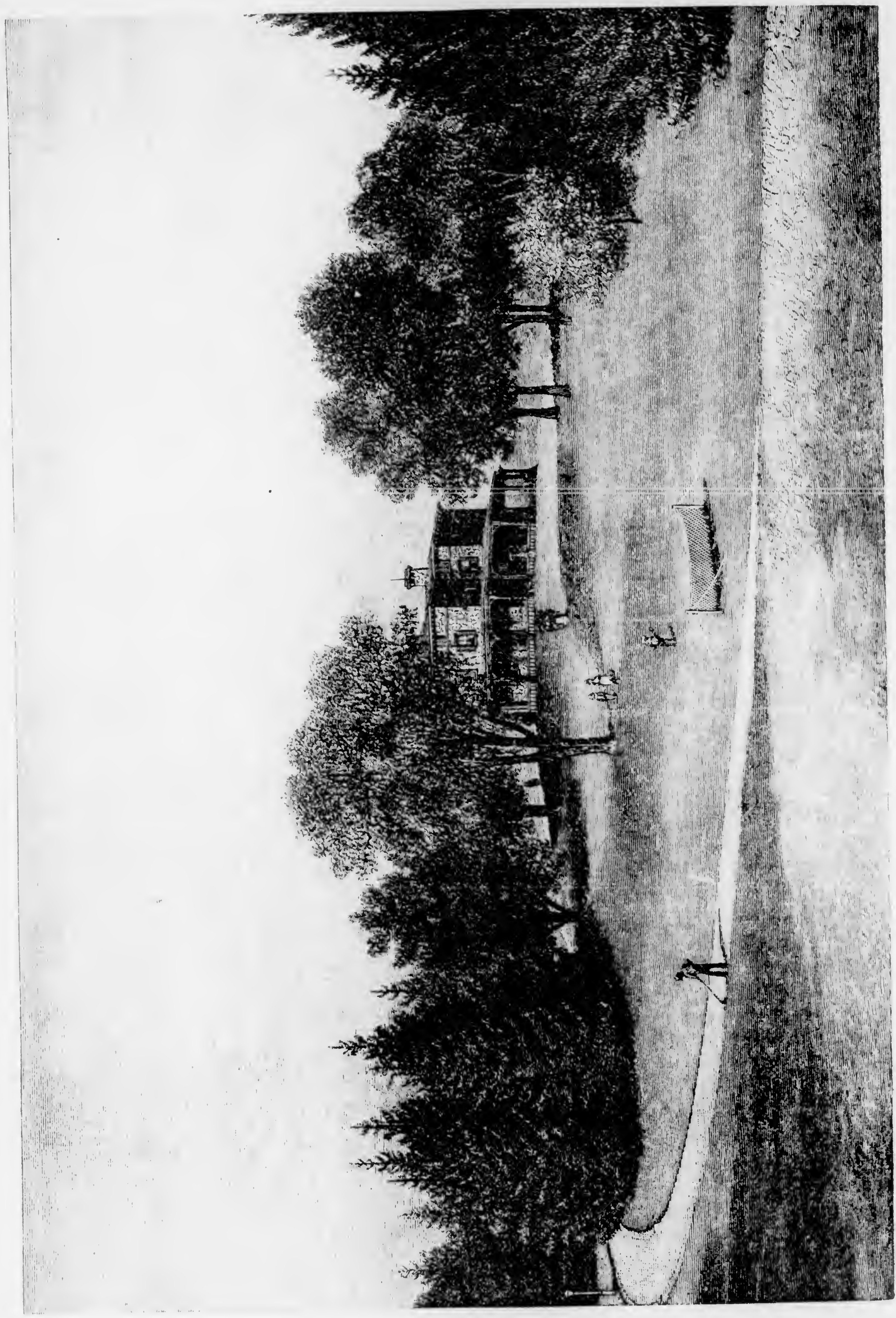
BY W. A. BUCKHOUT.

As the planting season comes around again I feel like saying a good word for our Table Mountain pine—Pinus pungens. Aside from their evergreen character, and beauty of form and color, there are two other, perhaps minor, peculiarities, which pines have. First, they produce that delicate tremulous movement in the air which we call the "sighing of the pines," and, second, they exhale a most delicious fragrance, the well-known resinous odor of the pine woods. Whoever has tramped and camped in our pine forests for either business or pleasure can recall how even the slightest movement in the air is betrayed by the needles of the pines. At night, especially, though no air seems stirring, they keep up a continuous subdued undertone of music most grateful to the ear.

And the fragrance of the pines is of a like subtle nature. Unlike that from many other plants, it comes, not from flowers, but from the abundant resin, which, scattered all through the wood, the bark, and the leaves, transudes about the buds and from every wounded surface. The delicate resinous aroma pervades the air, and makes it so invigorating that breathing is a positive delight. The healthfulness of the great pine forests is proverbial.

But few of us can have our door-yards in the pine woods, and thus enjoy to the full these admirable qualities of the pine trees; but in a measure we may have them by bringing the pines to our door-yards.

So far as I know, none of our native species, or those in common cultivation, give off so abundant a resinous odor as does our Pinus pungens. On sunny days in winter it is easily perceived on the south side of quite a small tree, and in the warm days of spring the air all about a tree is delight-



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INTENTIONAL SECOND EXPOSURE

fully fragrant especially in the evening. One can not help snuffing the air to get more of it. There is nothing heavy or oppressive about such an atmosphere. Breathing it becomes a luxury; and the mere expansion of the lungs which is thus produced is in itself a healthful process even if there is no hidden virtue in the resinous exhalation.

It seems to me that this feature alone makes the Table Mountain pine a very desirable species on the lawn. Its other good qualities have been often named, and need not be repeated here. We can hardly hope to get the gentle music of the pines except where a number of trees are together and have acquired considerable height, but the characteristic odor so agreeable to all can be approximated even in our smaller grounds. And for this purpose I think we have nothing so good as Pinus pungens. It ought to be more frequently planted on this account.

Prof. Botany, Agr. College, Pa.

[To the interesting suggestions of Prof. Buckhout, we may add that the purple male flowers give the tree a special spring attraction—while its very large cones, which the tree bears when comparatively young, continue this interest through the whole season.—Ed. G. M.]

TREES GROWN AS BUSHES.

BY REV. E. P. POWELL.

I do not know but that the MONTHLY has often enough showed the value of dwarfing our standard trees to use them as shrubs; but there is nothing finer for a small lawn or for groups on a large lawn. Among the best for this purpose are the Lindens, especially our common Basswood; the Catalpas, Tulip tree, Beeches and Birches; and among fruit trees the cherries. Of course dwarfed apples and pears are such only by grafting, that is, as they are generally planted. Yet even a dwarfed apple may be made by trimming alone; and made very pretty. The Jonathan grafted on ordinary stock and headed low becomes a marvel of beauty.

But what I intended to speak of was our forest trees cut into shrub forms. I have on my lawns many specimens of Catalpa that are invaluable. They do not exceed 10 feet in height and are in some cases as many feet through and are covered not only with fine foliage but in season with flowers. Most of the magnolias do better cut in this form. The Linden furnishes much larger leaves, and will blossom freely when old. I have cut them down when 3 to 5 inches in diameter and in two years secured superb shrubs.

From our enterprising friend, E. Y. Teas, at Dunreith, Ind., I received some golden-leaved and purple-leaved Catalpas of his own cross-breeding. These are a glory of the summer, grown as shrubs. There are many people who long to grow their childhood pets; but, having no room for large trees, do not comprehend how they can accomplish their desire. Let them grow any old favorite as a bush, and they will enjoy it.

Our wild lands often show us superb specimens of such planting, the result of cattle browsing. Nature thus gives us a hint. *Clinton, N. Y.*

EDITORIAL NOTES.

SWAMP TREES IN DRY GROUND.—The Sweet Gum, Red Maple, Deciduous Cypress and other trees usually found in swamps, grow better on dry garden ground than in their native localities, but do not produce perfect seed as readily.

PINUS EXCELSA.—The Bhotan Pine seems as hardy as the common White Pine, and is very beautiful. There are a number of mature trees in the vicinity. They are still regarded as among rare trees in nurseries.

THE COTONEASTERS.—These are closely allied to the Hawthorn and, like them, have very beautiful berries—unfortunately they are subject to a disease similar to the fire-blight in the pear, and plants die away too readily to make the class popular.

THE ORIENTAL SPRUCE.—This does not grow near so fast or so tall as the Norway. It has short dark leaves. The male flowers are rosy pink, which seem all the brighter for its dark foliage. It is one of the hardiest of all the spruces, and an admirable small evergreen where space is limited.

CEDRELA SINENSIS.—This tree, as rapid growing and with foliage and habit much like an Ailanthus, stands our climate as well, and will probably become popular.

HAWTHORN TREES.—Wherever the different species of Cratægus will thrive, there are few things more beautiful. One of the grandest sights to our mind, on the grounds of Ellwanger & Barry at Rochester, is a fine tree of the scarlet fruited Hawthorn. It bears fruits as large as cherries, which are very good to eat.

EVERGREEN CYPRESSES.—The Monterey Cypress is not hardy in the northern portion of the Atlantic States—but the Lawson Cypress and the Yellow Cypress or Nootka Sound Cypress as it is generally called—are mostly hardy and are particularly beautiful things to plant.

LAWN GRASS FOR LOUISIANA.—Mr. William Saunders of the Agricultural Department tells *Popular Gardening* that he is sure Blue grass, Poa pratensis, will make a good lawn grass for Louisiana.

POGOGYNE NUDIUSCULA.—This very pretty low California plant is the subject of a nice colored plate in *Gartenflora*. It looks in the garden border something as would Melissa pativina, well known to lovers of good herbaceous plants. The pistil is clothed with hair, which suggested to Professor Asa Gray the name of Pogogyne, which very likely those who prefer English to Latin names may render "Bearded Lady."

MANETTI ROSE STOCKS.—Over a quarter of a century ago, the Manetti was the great stock on which to graft roses in America. Almost every rose was grafted on it. At that time the English grafted them on the Dog Rose, or Brier as they termed them. There came revulsion in America. No one would buy a rose grafted on this stock. England took hold, as we discarded them, and millions were grafted on Manettis there. Now they are beginning to discard as we did, and are going back to the Brier again.

CLASSIFYING ROSES.—"D.," of Deal, a well-known contributor to the London *Journal of Horticulture*, says the judges of roses at exhibitions are badly puzzled over the classes in which some of the roses should be ranked. He complains that people who simply guess at the parentage of their roses, announce the supposed origin in the same positive terms as if they knew the fact—and this leads to a suspicion of all statements. The raiser of La France, M. Guèllot, sent it out as a hybrid perpetual, and afterwards himself classified it as a hybrid tea. Concerning Her Majesty he says:

> "It was very finely exhibited by the raiser, it obtained the gold medal of the National Rose Society, and then retired from public gaze. The name itself was a taking one, and for a couple of years the constant question was: When would Her Majesty be let out? At last it was rumored that it had been bought in its entirety by an American nurseryman, and that it was not to be had in England; then afterwards we heard that a very eminent firm of rose growers in England had been appointed sole agents all this time. I am justified in saying that everyone's belief, although some were startled at the character of its growth, was, that it was a Hybrid Perpetual. When it was announced here it was as a Hybrid Perpetual, but the firm who sent it out gave its parentage—a hybrid between Canari and Mabel Morrison! I have no doubt the raiser thinks this is its parentage, but others will be equally certain that the hybridizations have been interfered with. The announcements by other growers gave it the character of a Hybrid Perpetual, but did not designate its parentage, and so it has come to be generally accepted that it is a Hybrid Perpetual."

ROSA BRUNONIS.—Those who require a rose that will cover the greatest possible space in a short time should procure R. Brunonis, the Nepaulese Brier; when once established in fair soil it will make shoots 20 feet or more in length in a season. The flowers are white, single, and produced in bunches. In its way it is very effective. Amongst other roses that are not so much grown as they deserve to be, is the North American species R. lucida; the flowers are single, rosy-pink in color. It has beautiful toothed leaves which set off the flowers well. — *Gardeners' Chronicle.*

ARCTIC POPPY.—In the icy regions, and up among the snow at the mountain tops in lower latitudes there is a pretty perennial species of poppy with pale yellow flowers, known as Papaver nudicaule, which aids in giving the brilliant color famous to Arctic vegetation. This has been brought under cultivation, and made to give some pretty variations to the florist. There is one with flowers of pure white, another orange-scarlet, and the original light yellow.

MICHAELMAS DAISIES.—Under this head the Asters of North American woods are very much grown in English gardens, and are highly appreciated.

PLANT FOR TREE SHADE.—There is often found difficulty in getting any thing to grow under the shade, especially the shade of pine trees. The common Periwinkle, Vinca minor, just delights there. It also does well in the sun-light and is often used to plant in cemeteries on graves. To cemetery people in the eastern United States, it is known as myrtle; of course, the Italian myrtle and the crape myrtle, as well as many other "myrtles," belong to wholly different families.

THE JAPAN LOTUS.—Nelumbium nuciferum seems raised to the rank of a florists' flower in Japan. Their catalogues give the names of some twenty varieties.

CORBULARIA.—The section of the "Daffodil" family that once were popularly known as Hoop-

Petticoat Narcissus, belong to an old genus called Corbularia; and it is becoming quite fashionable to write or speak of them as Corbularias.

Garden Pentstemons.—In an essay on herbaceous plants read before the Massachusetts Horticultural Society, Mr. W. A. Manda noted the various families which gave us the most beauty in our gardens. He said:

"There are a hundred species and varieties of pentstemons, all of which are showy, but only a few will stand our winters, being for the most part natives of the Western and Southwestern States. Among the hardy kinds the best is P. diffusus. It grows from twelve to eighteen inches high, and the large purple flowers are very freely produced from May to August. P. pubescens is another good species, with long spikes of pale violet flowers, produced in May or June. P. ovatus is also worth growing; it flowers in June and July. P. glaber is a very showy and compact plant; the stems are a foot high, and covered for the most part with very large blue or purple flowers. P. lævigatus and the variety Digitalis are showy plants, growing to the height of five feet; the flowers are white in dense spikes. P. confertus has a profusion of lilac flowers, though not very large. P. barbatus is one of the best for general culture; the leaves are shining, and the flowers, which are borne on dense spikes, are deep red. There are several varieties, the best of which is Torreyi, more robust than the type, flowering later, and having darker flowers and larger branching spikes. Closely allied is the genus chelone, or turtle head, of which three species are hardy: C. glabra, with white flowers, and C. Lyoni and C. obliqua, with rose-colored flowers."

Sweet Briars.—Roses with scented leaves are still largely planted, though we do not find many novelties pressing for popular applause among them. The *Garden* says that one of the best of this class is a variety known there as Hebe's Lip. We do not think this has been introduced to America.

Hollyhocks.—This beautiful flower, once as popular as the Dahlia, but which came near extermination through the ravages of a minute fungus, seems inclined to be healthy again; and cultivators here and there, are venturing to try them again.

Box Laying.—The laying of Box and all other live edging should be pushed forward in mild weather; the levels should be determined from each end, and the intermediate pegs set by the use of the rods. This is only necessary with one side, as the opposite level is easily adjusted by means of a straight-edge and spirit-level. The edgings should afterwards be made up, well-trodden, beaten hard, and a trench cut with the spade about 6 inches deep, and almost perpendicular on the side next to the line. The Box should be pulled to pieces, the rough stems and tops trimmed off with the knife. Proceed to lay the young plants against the face of the trench, keeping the tops about an inch above the ground level; steady the plants with the back of the left hand, and with the right draw the soil up against the face. Always try to keep the plants of uniform height and width. Replace the remainder of the soil, tread firm with the foot, and cut off the surplus soil about 2 inches from the Box, and throw this on the border or bed.—*Gardeners' Chronicle.*

Garden Phloxes.—Mr. W. A. Manda of the Cambridge Botanic Garden said at a recent meeting of the Massachusetts Horticultural Society that of the hardy herbaceous and perennial plants, the phlox is one of the best, the different species of this showy genus affording flowers at all seasons. Phlox subulata forms a dense mass of rose-colored flowers, with pink eyes, in the earliest spring. Many garden varieties have been produced from this species, such as Nelsoni, atropurpurea, nivalis, the Bride, and others from the darkest purple to snow-white. P. amœna is another vernal bloomer; it grows about 8 inches high and produces in May a profusion of purple flowers. Not less valuable is P. ovata, which sends up large heads of beautiful flowers on stems from 1 to 2 feet high in June. P. divaricata has pretty bluish or lilac flowers on stems a foot high and blooms in May. P. glaberrima is a very neat and compact-growing species, a foot high, with long, shiny foliage and dense heads of pinkish flowers in June and July. P. reptans is a dwarf and neat species, never growing over 6 inches high and bears large flowers in May. But P. paniculata is best known and most cultivated; it grows from 2 to 6 feet high. The type usually has purple—seldom white—flowers in large and dense pyramidal spikes. Innumerable garden varieties have been produced from this species, of all colors from red to white. They flower from July to October.

Public Roads.—An exchange, in an admirable article on road making, says:

"The plan adopted by Telford, the greatest road engineer probably since the time of the Romans, was first to level and drain the site of the proposed road, then to lay upon it a solid pavement of large stones, and on this a layer of stones carefully broken so as to pass through a two and a half inch gauge, and no stone weighing more than six ounces, and over all gravel or other fine material in sufficient quantity to hide the stones. Great attention was paid to the surface until it became thoroughly solidified, and then it would stand for

several years with a very little repair, one of the roads constructed in this way requiring nothing to be done, beyond cleaning the dirt off, for six years after its construction."

The early Romans had not probably to deal with the contract system that prevails in most American cities. In these it is next to impossible to deal directly with the roads, for in spite of the efforts of the best citizens the money goes to pay voters rather than road menders. The contract system becomes a necessity of the situation. But under this system the lowest responsible—supposed to be—bidder has to be taken, and it is found next to impossible to get done that which ought to be done. The surface soon wears away, and it is found by experience, that the solid blocks of the Telford roads, often is all that is left. For public roads, therefore, that road is found to be the best that will stand the worst usage, without getting execrably bad—and Macadam is best for this. With the war-captives of the Roman Dictators to put to work, and no frost to contend with, we should prefer Telford roads or "such as the Romans had."

The Siberian Salt Tree (Halimodendron argenteum).—We do not know that this plant has flowered in American gardens, but we know of some plants that have endured our hardest winters. The following from the *Garden* indicates it to have some merit.

"This is a capital sea-side shrub, but thrives equally well in any good soil, and if a little salt be given old plants of it occasionally, it greatly improves their growth. This plant is propagated by means of seeds, by cuttings of the roots, and by grafting it on the Laburnum or the arborescent Caragana. When the latter, however, is used for the stock, it is apt to throw up suckers close to the ground, and, therefore, it is not so good for the purpose as the Laburnum, which does not do so. The name is derived from 'halimos,' maritime, and 'dendron,' a tree, in reference to the plant growing naturally in salt fields and saline steppes near the river Irtysh, or Irtish, in Siberia. It was first introduced in 1779. It forms an irregular, much-branched, deciduous shrub, from 4 feet to 8 feet high, when planted in the open border on its own roots; but when grafted standard high on the common Laburnum, it forms one of the most graceful drooping plants that can adorn a lawn or shrubbery. The leaves are alternate, abruptly pinnate, with two pairs of small leaflets, clothed with a whitish silky down, deciduous, and with the petioles and stipules spinose. The flowers are of a fine rosy purple, sweet smelling, pea-shaped, tolerably large, and produced in great abundance on two and three-flowered peduncles, from the end of May to the middle of July, or even later, if the season be moist. The young plants, however, flower but sparingly at first; but when they attain size and age they bloom profusely. The pods are inflated, or bladdery, hard, ovate, brown, and contain but few seeds. Its synonyms are Robinia Halodendron, Caragana argentea, and Halodendron argenteum."

NEW OR RARE PLANTS.

Variegated Umbrella Pine.—A variety of Sciadopitys verticillata with yellow striped leaves, has been introduced into France from Japan.

Cut-Leaved Red Berried Elder.—*Vick's Magazine* says a plant of this elder, found by Mr. E. Waring, near Tyrone, Pa., has been introduced into culture. "The young shoots look like purple-black hearse plumes," it says—but we suppose it will not be difficult to find a more cheerful simile for its appearance.

Lonicera Standishii.—We suppose this must be one of Mr. Fortune's introductions from China. It proves perfectly hardy in American gardens, and blooms before any of the other upright Honeysuckles; even before the Lilac is out it is in blossom. It is white with a slight tinge of pink, sweet-scented, and with foliage something like the Weigela. L. Philomelæ is a very pretty rose-colored one, also flowering early.

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

TRICHOPILIA TORTILIS.

BY CHARLES E. PARNELL.

The twisted petaled Trichopilia tortilis is a very pretty free flowering dwarf evergreen orchid. It is a native of Mexico, from whence it was introduced in 1835. The leaves which are of a dark-green color and about 4 inches in length, are produced from the summit of the pseudo bulbs which are about 2 inches in length. From the base of these bulbs the flowers are produced. The flowers which are freely produced at different times throughout the year are quite curious in form, the sepals and petals being twisted like a corkscrew and of a brown and pale yellow color, the creamy white lip being spotted with red.

The Trichopilia is a plant that can be easily cultivated and should be grown in a compost of fresh sphagnum moss intermixed with bits of charcoal in order to secure sufficient drainage. In placing the plant in the pot keep it in the centre, and well elevated above the rim, in order to prevent the young shoots from being injured by damp or an excess of moisture; this will also give the flowers an opportunity to properly develop themselves. Water can be freely given whenever the plants are in a state of growth, but when at rest do not give so much. In the winter give a temperature of from 55° to 60°, keeping the plants as close to the glass as possible at all times.

If the plants, when in bloom, are removed to a cool and dry atmosphere they will remain for a long time in perfection, care being taken to carefully moisten the roots of the plants occasionally, or whenever necessary. Propagation is effected by a careful division of the plant; this should be done before the plant starts into growth.

The generic name is derived from "thrix," a hair, and "pilion," cap, in allusion to the anthers being concealed below a cap surmounted by tufts of hair, and the specific alludes to the twisted form of the petals and sepals.

When well grown, this is a very pretty and desirable orchid, and as it can be easily grown, and procured at a very reasonable price, it is certainly deserving of more attention than it at present receives. *Queens, L. I.*

NAMELESS BEAUTY ROSE.

[Translated by E. M. from the Deutsche Rosen-Zeitung.]

Mr. Max Deegan of Köstritz has had a large tea rose in his possession which few people know of. He has long preserved it and it has always proved an exceedingly prolific and flourishing rose. As so many of the good old species have been lost in the ever seeking after new ones, so this rose formerly was not appreciated, although it is more valuable than many of the newer productions. One can only thank Mr. Deegan, that among all these novelties, he has cherished and protected this pearl of tea roses, and has taken pains to make it accessible to rose growers and friends at a reasonable price. Mr. Deegan calls it a Noisette rose, and rightly; the growth and foliage are that of the tea rose, and the clustered form of the buds points to the Noisette rose variety. At the last year's meeting of the German rose growers in Darmstadt, there were a number of flowers exhibited by the cultivator of this rose, taken from this Nameless Beauty, with the request that if any of those present at the exhibition were acquainted with this species they should let the exhibitor know. A reader of this request thought he recognized the rose from the form, coloring, and the clustered buds, as an old acquaintance, the old Noisette rose "Mme Creard," whose flower the Nameless Beauty resembles very much. Returning from Darmstadt, in a little trip to Köstritz, we had an opportunity, at Mr. Deegan's, of seeing this rose growing, when we readily discovered the difference. This was a warning to us, against designating the variety, when the specimen cannot be observed upon the plant, for it takes careful and experienced eyes to keep from taking one variety for another. The Nameless Beauty, as Mr. Deegan appropriately calls it, is really an extraordinary beauty, and will again appear in rose collections. Yes she will perhaps be a celebrated beauty, when her value is recognized. Now-a-days we expect a great deal of a rose if it finds favor with a critic. But if the requirements are graceful proportions, not too weak, and not over luxuriant, then we find them in the Nameless Beauty. The form of these flowers must be symmetrical, the coloring pure and the growth prolific, and above all the rose must be fragrant. And the strong yet mild aromatic perfume, and the graceful form of the bud have made it a great favorite with ladies. The color is white, very seldom flesh tinted; sometimes tinted with a light delicate yellow. Particularly in summer, it is very rich in bloom, the flowers appearing until late in the fall. These thrive too in not very favorable weather.

That this rose was known by no one may signify, perhaps, that in the time when Mr. Deegan's father received this rose, there may have been a mistake made by the firm from which the gentleman received it; perhaps he received some novelty under a different name, which the unknown cultivator missed perhaps later, with a great deal of regret. But "there is nothing new under the sun" says Ben Akiba. Be this as it may, we have here a rose which deserves the warmest commendations, so much more so, because Mr. Deegan has offered it to the friends of roses at a low price. Others perhaps would have called this rose a novelty, and have offered it at a high price.

[This rose seemed to excite so much enthusiasm among German florists, for its great merit as a cut flower, that we were induced to give a full account of it—in August No., 1886—with an illustration, for the benefit of the Society of American Florists, when they had their meeting in Philadelphia. We are glad to know that our efforts to give early information on a matter of such great importance to the florists of our country have been appreciated. We give this additional note to show how much interest is still excited by the rose in Germany.—Ed. G. M.]

CULTURE OF THE CHRYSANTHEMUM.

An Essay read before the Mass. Hort. Society, Jan. 15, 1887.

BY ARTHUR H. FEWKES.

The cultivation of the chrysanthemum should begin as soon as the plant is through flowering, for it is in a great measure upon the health of the cutting taken from the old plant that future success depends. Many growers, as soon as the plant has flowered, cut it down to the pot; but this is a very risky thing to do, as many varieties have a weak constitution and will sometimes refuse to start into growth if the old tops are cut off too soon. The best way is to cut the branches back quite severely at first, but not to cut the plant down to the pot until the shoots have begun to start quite freely from the roots.

The plants should receive as good cultivation after they have bloomed as before, for it is useless to expect a good, healthy plant from an unhealthy cutting. From carelessness in this respect, or from want of room, plants are often packed under the benches or in some equally unwholesome place, and the consequence is that the shoots which start from the roots, from which the cuttings are usually made, will be very soft and weak, and totally unfit for cuttings. To this cause alone the essayist attributed full half the failures so common in chrysanthemum growing.

The chrysanthemum is essentially a sun-loving plant, and any encroachment on its rights is fully paid for in sickly plants and flowers devoid of that exquisite coloring that should make them so charming. The plants, as soon as they are through flowering, should be put in the sunniest place possible and have plenty of fresh air, judicious watering and a temperature of about 50° or 55°. The matter of watering is a very important one at this time, as well as through the summer months. The plants are more apt to be over than under watered at this season, but still they should never be allowed to come to a wilting condition, especially after they have begun to make fresh growth.

As soon as the young shoots are three or four inches long they are taken off for cuttings and placed in the cutting bench in good, clean, rather fine sand, in a temperature of from 45° to 50°, with a gentle bottom heat of about ten degrees higher. Too high a temperature is a very prolific cause of failure in striking cuttings.

In making the cuttings, choose such shoots as have a fresh, growing appearance, and reject all those that are at all rusty or unhealthy. Cut off all but about three leaves at the top, for if more are left they are very apt to wilt, and then it is difficult, if not impossible, to revive them. The lower end is cut with a sharp knife, without regard to the position of the leaves, as the roots start about as freely between the joints as they do below them. Ample room should be allowed the cuttings while in the sand, for if they are too much crowded they are apt to gather an excess of moisture, which will cause them to damp off, especially if they have previously suffered from dryness.

If everything goes well the cuttings will be rooted in about two weeks, and when the roots are from half an inch to an inch in length they are carefully removed from the sand and immediately potted in 2¾-in. pots. It is quite important that the cuttings should be taken from the sand as soon as they are well rooted, for as soon as the roots are formed the cuttings begin to grow, and there being very little nourishment in the sand, they soon become weak and stunted if left there.

The soil for potting should be composed of about three parts of good sandy loam, and one of well-decayed stable manure. A heavy clay should be avoided. As soon as potted, the plants are placed in a quite cool, light, and airy structure, and shaded for a few days from the bright sunshine by a covering of papers. They should be sparingly watered at first, but as they get used to their new condition and begin to grow freely the quantity may be increased as required, and from this time to the end they should never be allowed to suffer from want of water.

For the greater part of the plants that are to flower in autumn, the cuttings are put in from the first to the third week in March, and potted as soon as rooted; the healthiest are selected to be potted up preparatory to being planted out in the ground.

After the pots are well filled with roots, but before the plants are actually pot-bound, they are shifted from the 2¾-inch size to 4-inch, and from that to 5-inch, as becomes necessary, for the plants should never be allowed to become pot-bound. An April cutting that has never been checked is much better than one started in February or March and allowed to become pot-bound, for one great secret of success in chrysanthemum culture is to be found in keeping the plants in a healthy growing condition from the time the cuttings are made until they come into flower.

Pinching may begin as soon as the plant is about six inches high. Pinch out the smallest amount possible from the growing end, never cutting back to hard wood except in cases of unshapely growth. Pinching is best done a few days or a week before the plant is shifted to a larger pot, for by this time the new shoots have begun to start, and will be in condition to use the nourishment supplied by the fresh soil.

Even when the grower has the advantage of a house capable of being ventilated to an unusual degree, it is best to place the plants in a cold frame as early as can be done with safety from frost. Here they can be hardened off, and will be in better condition to start into growth immediately after planting out, which is usually best done about the middle of May.

For planting out such a location should be chosen as will at all times have a full exposure to the sun and air. It is desirable that it should be so situated as to be protected from strong winds, but this must not interfere with the prime necessities of sun and air. The plants can be so staked and tied that they will withstand all ordinary winds, but nothing will supply the deficiency of direct sunlight and fresh air.

A light, rich loam is the best soil; if possible it should be quite sandy, so as not to adhere to the roots in hard lumps, but to fall away without taking the roots with it. With a proper soil and a high, open exposure there need be little fear of mildew, the one nearly unconquerable enemy of the chrysanthemum grower.

The plants should be placed in rows, about 2½ or 3 feet apart each way. For each plant a hole about the size of a potato hill is dug and filled with manure, which is well forked into the soil. The plant is placed in the hole, which is then filled up with loam, being careful that the surface is lower than the surrounding ground, so as to retain any water that may be given to the plants.

The plants are to be kept well watered until the roots have taken hold of the soil, after which they receive no water unless the season is dry and they show signs of suffering, when they may have it as often as needed, occasionally substituting liquid manure. Whichever is used should be applied at evening, so as not to be evaporated before it has time to soak into the ground. As soon as the roots begin to take hold of the soil, the plants will push out branches very freely, which should be pinched as soon as they are four inches long, repeating the operation as often as the branches become long enough, and continuing until about the middle of July, after which the plants may be allowed to grow at will, simply cutting back any unshapely branches. The most severe pinching is done while the plants are quite small, so as to secure as many branches near the bottom as possible. These remarks do not apply to varieties that make shapely plants without pinching; such had better be left to themselves.

Soon after setting out, each plant is furnished with a strong stake, and as it increases in size others are added to prevent the branches from being broken by the wind. As the season advances, many branches become so heavy that they are unable to sustain their own weight, and it frequently happens that what has promised to become a fine, shapely plant wlll be irreparably disfigured by one or more branches lopping off. To prevent this, strings are tied around them from time to time in such positions that one branch sustains another. In this way few branches are lost and much time is saved when the plants are potted.

The worst insect pest is the black aphis, which will cause much trouble if allowed to increase. Dalmatian powder applied with a bellows is an effectual remedy.

About the second or third week in August the plants are lifted, the best time being when the ground is very dry, for the plants will then recover sooner than when it is moist. They are taken up thus early because it is better that they should form their buds after potting, for, if formed before, their potting will cause a severe check which is apt to result in deformed or one-sided flowers.

The plants are lifted with all the roots that can be secured; but in order to get them into reasonable-sized pots considerable of the soil is carefully shaken off, provided it is light enough to fall off easily without breaking into lumps. For potting, soil containing more manure than that for the small plants is used—about two parts of good loam to one of well-rotted stable manure. The pots are selected according to the size of the roots, being careful not to have them too large.

In potting large plants the soil should never reach higher than an inch from the rim of the pot, so as to leave ample room for an abundance of water and liquid manure.

After the plants are potted they are placed under trees where they can have plenty of air, but at the same time be shaded from the hot sun. They remain here about a week or until they seem to have recovered, when they are taken to the ground where they grew and plunged to the rim of the pot in the soil. As they begin to grow they must have plenty of water and never become dry. The young roots soon reach the sides of the pots, after which liquid manure may be freely given as long as the buds are growing.

As cold nights approach, the plants are placed under glass, even before actual frost appears. It is a mistake to try to keep the plants out until the actual appearance of hard frost, for we have many nights not cold enough to freeze, but cold enough to check their growth, and this checking of their growth is an acknowledged cause of mildew wherever it appears.

For a long time after placing them under glass they require no artificial heat, and should be very freely ventilated through the day. In cold cloudy weather it is best to introduce a little heat into the house, if only to dry out the dampness. Soon after they are brought in, the black aphis will appear, and must be persistently fought with tobacco smoke, as long as the plants remain inside.

Those who wish to cultivate chrysanthemums, but have no house, will do best to procure young, healthy plants in May, giving the treatment above advised after that time, until the time for housing, when they may be taken in on cold nights and placed out of doors through the day. As house plants, they should be kept well watered, syringed as often as possible, being careful not to wet the flowers, and kept in the coolest, airiest place to be found. The black aphis, or black fly, is usually found quite troublesome, but can be conquered by persistent application of Dalmatian powder with the bellows.

If it is desirable to keep the old roots over the winter, they should be placed where they will be kept quite cool, and if possible, near a sunny window. Early in the spring they may be divided and planted out in the open ground and receive the same treatment as young plants.

The would-be cultivator must not expect that his plants will always be as large or his flowers as fine as those he sees at our fall exhibitions, for the chrysanthemum requires unremitting care and attention from the beginning of the young plant to the end of the flowering season, and experience is valuable here as elsewhere. But he should not be discouraged, for a fair amount of success is attainable with ordinary cultivation, and he will probably feel repaid for what time and expense he may bestow upon them.

EDITORIAL NOTES.

WINTER CARNATION: CARL LACKNER.—It is not often that Regel's *Garten Flora* figures florists' flowers, unless they possess special merit. The number of 15th of April gives a colored plate of this variety. It is a very pale straw, with shading of white through it. It is spoken of as one that will make a permanent reputation with florists.

A FINE BOUGAINVILLEA SPECTIBILIS.—In the greenhouse of Mrs. M. B. Conard, at Sharon Hill, near Philadelphia, a beautiful specimen of this plant was profusely covered with its flower-like bracts during April, and was a sight well worth seeing. It flowered from almost every shoot. It is a Peruvian plant, long known to cultivators, but as it generally flowers only with age, few cultivators of flowers know how well worth waiting for is the great beauty it possesses.

AUTUMN LEAVES FOR HOME DECORATION.—Looking through Mr. August Rölker's catalogue of "Florists' Supplies," one is reminded of how great and varied are the means afforded of cheap and yet beautiful home decorations to what was possible but a very few years ago. Autumn leaves, for instance, have become a large article of trade. As every locality has some kind of beautiful autumn leaf different in some style or other from those in other sections, it will be a good thing for those with slender purses, but with some botanical knowledge, to give the matter some attention. Only a person with such knowledge will know whether the beautiful specimen before him is common or not in other localities.

A REFRACTORY MARESCHAL NIEL ROSE.—"W. M.," Govanstown, Md., writes: "I am in charge of a greenhouse on a gentleman's country place, size, 75x18 feet—glass area about 1,500 square feet—heated by one flue, running under front bench; in severe weather the thermometer goes as low as 45°. It is a house of general utility for raising bedding plants, cut-flowers, etc., etc. I have been fairly successful with roses, such as Safrano, Niphetos, Pearl de J., and even Catharine Mermet, but I have a Mareschal Niel which bloomed well last June, then started growing in

October and produced only about two dozen buds this winter, none of which were perfect, possibly because of too low temperature. It is now dormant and I expect it will produce a crop again about June. It is very strong growing, two seasons' growth covering 220 square feet. Now what I would like to know is, can M. Niel be grown successfully in such a house, and how can I change the habit of the plant, so as to make it produce the main crop during the winter months, instead of, as now, during the summer? I will be much obliged for the information."

[The Mareschal Niel is not now grown by florists for cut-flowers to the extent it used to be, partly on account of its waywardness as referred to by our correspondent, but chiefly because Perle des Jardins has become a successful rival. When it was popular, the season of flowering was regulated by pruning, the exact season for which depended on the amount of heat that could be commanded, aspect, slope of glass, and other circumstances. Taking the conditions as detailed by our correspondent, we think a severe pruning back to the two-year-old wood about the end of August, would bring winter flowers for him.—Ed. G. M.]

New Greenhouses.—Among the houses in course of erection is a range for Palms and Orchids by Henry Graves, Esq., of Orange, N. J.; and Alfred C. Harrison, Esq., of Chestnut Hill, Philadelphia, is erecting a handsome range of graperies. These are under the supervision of Mr. J. Plenty.

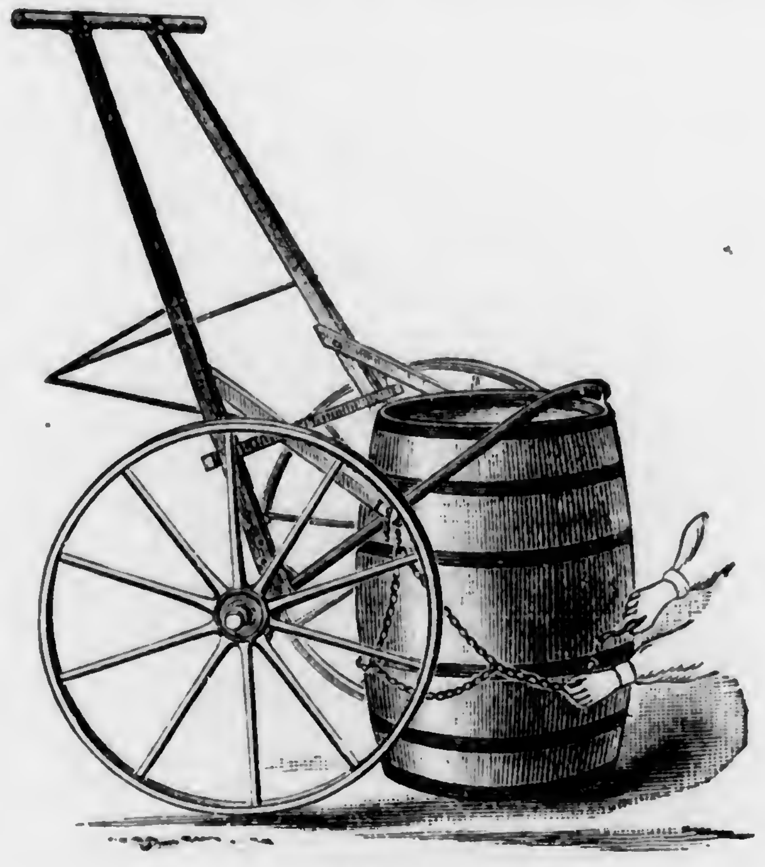
FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

For those who have large tracts of land to cultivate, the plough is of course the turner up of the soil. Hundreds have but small plots which must be tilled by hand. It is strange as one travels here and there to see so general a use of the spade for this purpose, when for over a quarter of a century efforts have been made to introduce the digging fork. It seems as if the mass of mankind can never learn. Of course where there is a thick sod, or weeds to dig under in a very light sand, the spade has yet to be used—but in probably 90 per cent. of cases where the spade is used, it could be done with the digging fork. More than double the work can be done in the same time, and with half the labor.

In like manner for hoeing and cultivating between rows, the merits of the wheel-hoe are comparatively unknown. Passing a large agricultural warehouse recently, the infinite variety of implements to draw or push, without wheels, offered was amazing, and more amazing to be told that the sales were very heavy. These things are tried for a few times and then thrown away. A wheel-hoe will enable one to do the work of a dozen men with an ordinary hand-hoe—and when once a man thoroughly understands it, he will not use others. Why then is the substitution so slow.

Another matter has often been surprising, that easily handled water carts or water engines are not in more general use both for vegetable gardens and orchards. There have been also many improvements in these of late years, which make the labor light in comparison with what it used to be. Some of the objections were to the amount of room so many different implements occupied; but even here there have been improvements by which the running gear, which is usually the most cumbersome part, can be used for many different purposes. In connection with the water barrel idea, Mr. J. B. Bare of 831 Greenmount Avenue, Baltimore, has brought to our attention what seems to be an excellent idea in thus saving space for the utensils and implements, and labor at the same time. He calls it a "general utility cart." The running gear is shown in Fig. 1 with the manner of attaching a barrel to it. Fig. 2 shows the same when in motion. With a small force pump, hydropult, or common syringe, the emulsions and solutions for the destruction of insects, washing trees, or even sprinkling or watering garden vegetables, can be readily applied—while if baling or dipping be desirable, it can also be as easily done. If it be desirable to use the same running gear for carrying out plants for bedding purposes, collecting potatoes or other vegetables, taking out small lots of manure, bringing in soil for potting, it comes in as just the thing. Fig. 3 shows how it works in this way. It does not appear by what Mr. Bates has shown us, that any attempt has been made to arrange the connection for hoes and cultivators, as referred to in the fore part of this article; but any one can see that it can readily be done—and indeed one of the chief thoughts we have had in preparing these "hints" now is, not only to give the hint to our readers to go on and profit by these admirable labor saving machines—but hints to those who have done so much to serve us by inventing them, to go on and do more for us.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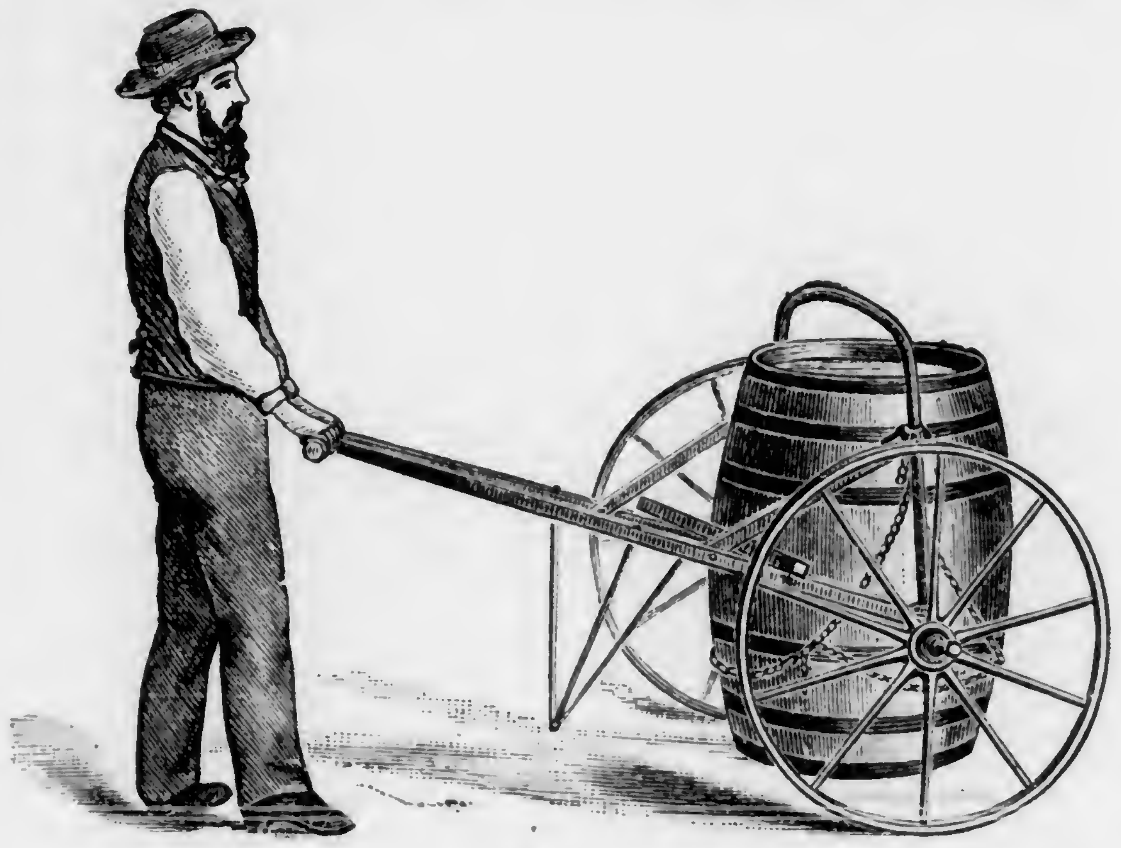
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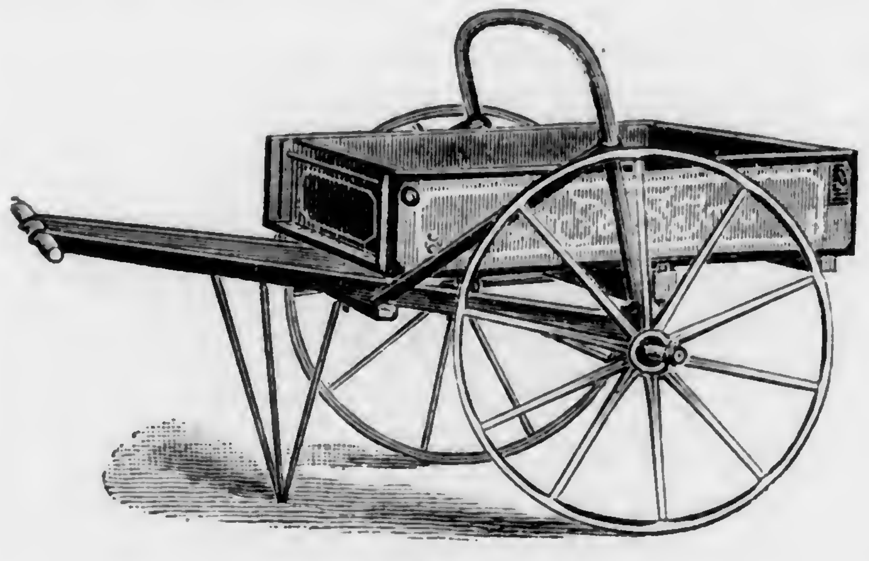
Fig. 3.

COMMUNICATIONS.

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BY MAX.

The Yellows referred to in the May number as attacking peach budded on plum, was the genuine Yellows—not a starvation or badly drained soil Yellows, but the simon-pure article. My observation teaches that the fungus mycelium is always a concomitant of this. Whether the fungus produces the disease or vice versa is difficult to say. To be more exact, whether the disease may not simply furnish an agreeable state of affairs for the development of the fungi is a question. We never look for the fungus until the disease has manifested itself and then it is too late to tell "which causes which." As to a remedy, I have never seen a tree benefited, much less cured, by any kind of treatment, after an attack of what we call Yellows in Virginia. That is about all I know about it. Do you know anything more? If so, tell us.

[The Editor has little doubt in his own mind that the disease is caused by the mycelium of a species of Agaricus—one of the mushroom tribe. This view he has placed on record before. Most nurserymen of large experience know, that precisely the appearances—we may say precisely the same disease—occurs in many trees, of which the pines and spruces afford notable examples—the white pine particularly. The growth of this fungus is first encouraged by half rotten wood, half rotten roots in the ground—or half rotten moss used for packing plants from Europe. Having once got a fair start in this way it spreads to healthy and sound roots, destroying them also. The exact species of Agaricus that does this has been determined, though at the moment of writing the name of this exact species is not at hand. No one that we know of, has examined the fungus which is always at the roots of a peach with the Yellows in its earlier stages, so far as we know, to see whether it is the identical Agaric or not—the mycelium appears to be the same under a strong pocket lens—but when we see the exact appearances in so many other trees, and know that this

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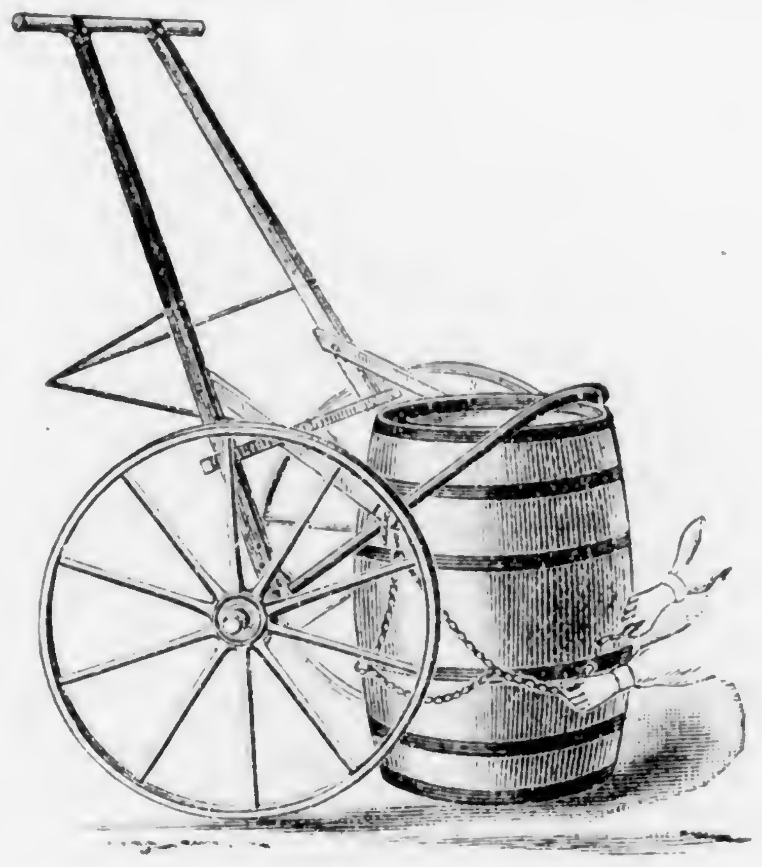
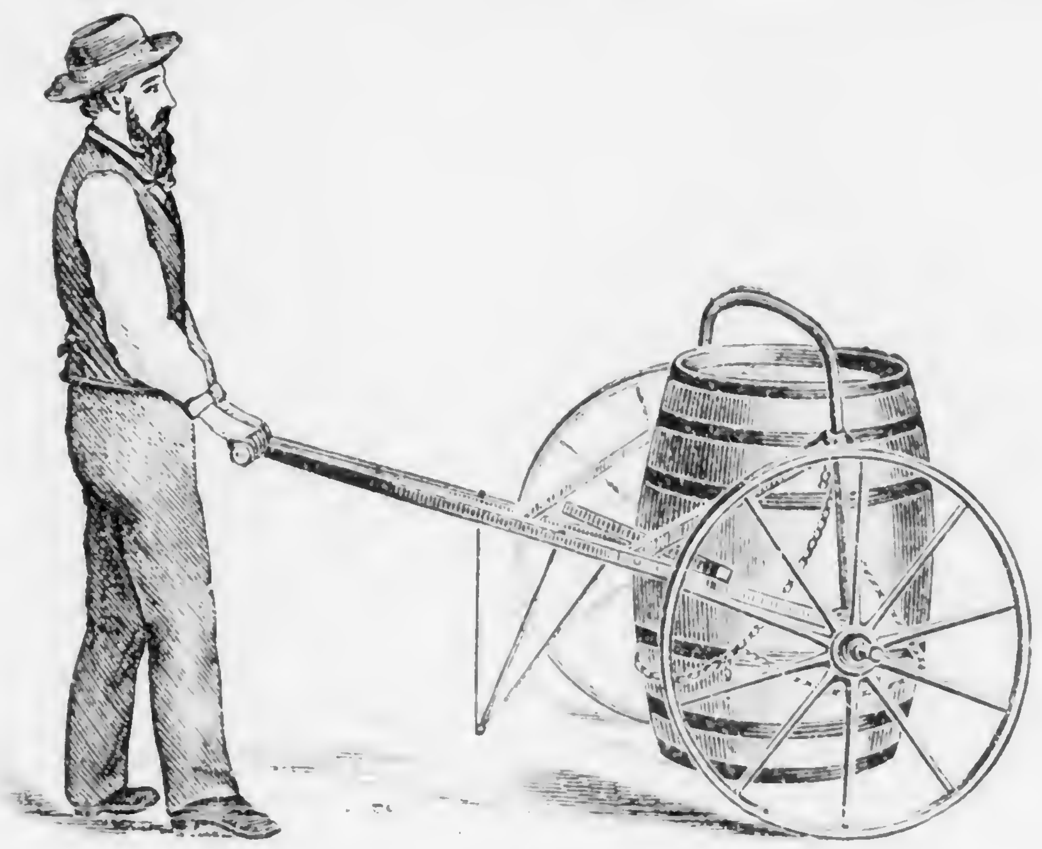


FIG. 1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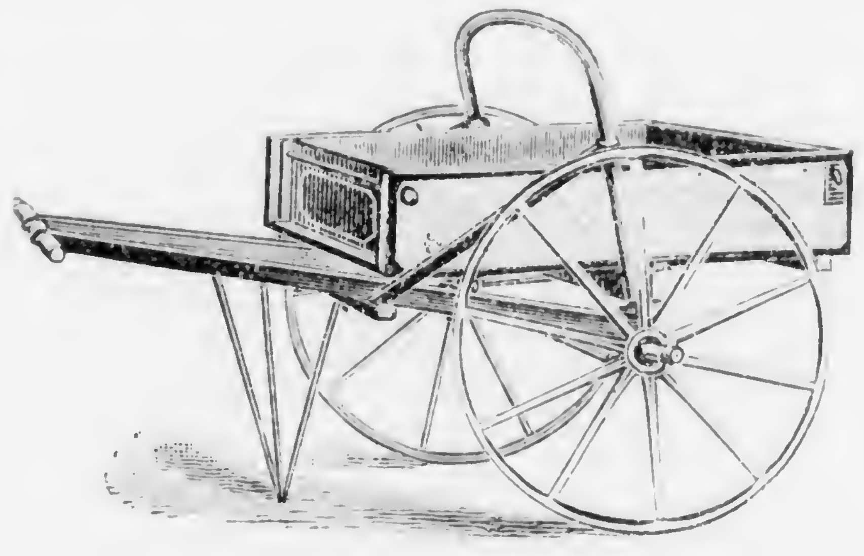
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INTENTIONAL SECOND EXPOSURE

fungus produces them, we may certainly, to say the least, grant the extreme probability of the same fungus producing it. The experiments of Prof. Penhallow and others showing the deficiency of potash in the diseased wood, does not in the least militate against this view, as the power to apply potash may have been affected by the diseased roots.

Aside from this the Editor has found the Yellows in the peach follow the placing of a spadeful of fungus-infested soil from around a Norway spruce, suffering from the disease. Of course he understands that an objection may be fairly made, that the peach may have become so diseased, without this application.

Clearly there is no reason why the mycelium of this Agaric is not the cause of disease—but many reasons why it may be.—Ed. G. M.]

THE YELLOWS AND PLUM STOCKS.

BY W. W. STELL.

"In the March issue of the MONTHLY is a suggestion from Mr. C. Hiller that it might be profitable to utilize the non-producing Blackman plum as a stock upon which to bud peaches. Mr. H. thinks this would be a protection against the Yellows. And the Editor gives a quasi endorsement." The above is the language of Mr. "Max" in the May issue of the MONTHLY. Mr. "Max" does not hold to this theory, for he says thirty-five years ago his father tried the experiment of budding peaches on plum stocks and found that they had the Yellows as bad as those that were budded on peach stocks. I believe I have been the cause of this controversy, by asking in the MONTHLY several months since if any one had ever fruited the Blackman plum and if so what of the fruit? And I believe also that it is now an acknowledged fact that the Blackman plum bears no fruit; consequently I am constrained to ask if Mr. Hiller, "Max" and the wide-a-wake Editor, have not been "sleeping on guard?" Or can they explain to the thousands of readers of the MONTHLY how it is possible to produce stocks from the "non-producing Blackman plum" to bud peaches upon at all? If the Blackman plum bears no fruit (which you acknowledge to be true) it has no seeds, and no seeds means no seedlings or stocks to bud on. Surely you will not answer by saying the Blackman plum may be grown from cuttings and thereby produce stocks. Would not this be a very uncertain, slow and expensive process to obtain stocks to bud peaches upon? *Paris, Tex.*

[All the plum stocks in use in the nurseries of Europe up to very recent times, were raised by layers—and some very popular kinds of stocks, the Muscle for instance, are still so raised. All the quince stocks in that part of the world and this are raised from layers and cuttings, and pear trees on quince stocks are all raised on stocks from these layers and cuttings.

Our correspondent probably means that it would not be possible to raise peach trees as cheaply on such stocks as on stocks raised from seeds; he is probably right.

Still if it should be found that peaches raised on some peculiar stock, would infallibly be proof against Yellows, we imagine there are people who would be willing to pay a much greater price for the trees than now prevails.—Ed. G. M.]

TREATMENT OF THE DOWNY MILDEW AND BLACK-ROT OF THE GRAPE.

BY NORMAN J. COLEMAN.

Last year a circular was sent out by this Department recommending for trial certain remedies for mildew and rot of the grape.

The results of experiments in 1886 have fully demonstrated the value of sulphate of copper, "blue stone," over all other remedies in combating the mildew, and the results of many chemical analyses of the fruit and parts of vines treated with the copper compounds have clearly shown that there is no danger to health attending their application. The only precaution advised is not to apply them near (within fifteen days of) the vintage.

In their employment the fact must be kept in mind that their action is only preventive; therefore their application should be made early in the season, from the latter part of May to the end of June. Subsequent applications act only in so far as they serve to check the spread of the disease. The amount of the fluid compounds required to treat an acre of vines will depend largely upon the kind of pump and spraying nozzle used to apply them, and upon the extent of growth of the vines themselves; the amount may vary from 20 to 35 gallons.

The following are the formulæ of the remedies which so far have given the best results. An account of the results of trials you may make with one or more of them is earnestly desired, and a blank form for making up a report for the use of the Department in future publications will be sent to those interested upon the return of an addressed postal card inclosed by the Department.

LIQUID REMEDIES.

(1) *Simple solution of Sulphate of Copper.*—Dissolve one pound of pure sulphate of copper in 25 gallons of water. Spray the vines with a convenient force-pump having a nozzle of fine aperture. Less lasting in its effect than the next, as it is easily washed off by rains.

(2) *Eau Céleste, Blue water* (the "Audoynaud process").—Dissolve one pound of sulphate of copper in 3 or 4 gallons of warm water; when completely dissolved and the water has cooled, add one pint of commercial ammonia; then dilute to 22 gallons. The concentrated liquid should be kept in a keg or some wooden vessel and diluted when required for use. Apply the same as in the case of simple solutions.

The effects obtained by this preparation have been equal to those resulting from the use of the Copper Mixture of Gironde, and are said to be even more lasting.

(3) *Copper Mixture of Gironde, Bordeaux Mixture.*—Dissolve 16 pounds of sulphate of copper in 22 gallons of water; in another vessel slake 30 pounds of lime in 6 gallons of water. When the latter mixture has cooled, it is slowly poured into the copper solution, care being taken to mix the fluids thoroughly by constant stirring. It is well to have this compound prepared some days before it is required for use. It should be well stirred before applying. Some have reduced the ingredients to 2 pounds of sulphate of copper and 2 pounds of lime to 22 gallons of water, and have obtained good results.

Well-made pumps with specially constructed nozzles are required for the application of this compound, unless we resort to the tedious and wasteful method of using brooms or whisps made of slender twigs, which are dipped into the compound and then switched right and left so as to spray the foliage, as directed in our circular of last season. The Vermorel apparatus, including reservoir, pump, and spraying nozzle, is well adapted for vineyard use, and is specially constructed for applying the various liquid preparations containing sulphate of copper.

POWDERS.

(4) *David's Powder.*—Dissolve 4 pounds of sulphate of copper in the least possible amount of hot water, and slake 16 pounds of lime with the smallest quantity of water required. When the copper solution and the slaked lime are completely cooled, mix them together thoroughly, let the compound dry in the sun, crush and sift. Apply with a sulphuring bellows furnished with an outside receptacle for the powder. The copper coming in contact with the leather will soon destroy it.

(5) *Sulphatine.*—Mix 2½ pounds of anhydrous sulphate of copper with 15 pounds of triturated sulphur and 10 pounds of air-slaked lime. Apply in the same manner as No. 4.

Both these powders (Nos. 4 and 5) ought to be procured from the manufacturer, prepared ready for use.

NOTE.—It is very probable that Nos. 2, 3, 4 and 5, will be found equally serviceable in preventing potato "blight" and "rot." No. 5 should be employed when one has to contend with both the Downy and Powdery mildews. For apple scab we suggest trials with Nos. 2 and 3.

The degree of success attending the use of these compounds will depend more or less, (1) upon their careful preparation, (2) the time of the application, (3) the more or less intelligent manner in which they are applied, (4) the atmospheric conditions existing at the time or which may follow the applications, (5) the number of treatments made, and (6) the purity of the copper used.

In all cases where these remedies are tried a number of plants or vines should be left untreated to serve as "control experiments," for comparison with those treated. Prices of materials (subject, of course, to variations):

Sulphate of copper, pure, in quantity by the barrel	5@6	cts. ℔ pound.
At retail	10	" "
Anhydrous sulphate of copper	28	" "
Flowers of sulphur, wholesale	2½	" "
Retail	5@6	" "
Ammonia, wholesale	5@6	" "
Retail	10	" "
Lime, per barrel (200 pounds)	$1.05	" "
"Sulphatine," in quantity	5@6	" "

Comm'r of Agriculture, Washington, D.C., Apl,'87.

[The above has been addressed by the Commissioner to the grape growers of our country, and, in view of the importance of the subject, we give it a prominent place here.—Ed. G. M.]

EDITORIAL NOTES.

DEGENERATION OF FRUITS.—Mr. O. B. Hadwen, gave an admirable address on this topic before a recent meeting of the Massachusetts Horticultural Society, which he summarized as follows:

"First—Each fruit-bearing tree and plant seems endowed with a certain given period of life, influenced by favorable and unfavorable conditions.

"Second—Each species and variety of fruit-bearing tree and plant seems governed by conditions pertaining exclusively to its growth, maturity and decay.

"Third—Some fruits appear to degenerate, while others give but little evidence in that direction, and the same may be said of vegetables during this century.

"And while there is undoubtedly a limit to the life of every plant and fruit, neither science nor philosophy affords the data by which we can deduce with any degree of accuracy the duration of any of the larger fruits or vegetables.

"Charles M. Hovey was called on by the Chair, and said that it is well known that fruits degenerate, but whether from unfavorable climates or other causes is not settled. The old varieties of peaches are still in perfection in England: within a week the speaker had seen the Grosse Mignonne and George IV. recommended for cultivation as among the best varieties there. Of strawberries, the Keens' Seedling, introduced in 1821, and the British Queen, originated about forty years ago, are still favorite varieties in England. The Hovey's Seedling and the Boston Pine were raised by the speaker in 1833, and in his ground still give as good crops of fruit as ever. The Wilson, which has been more widely cultivated than any other variety, is still very good. We cannot raise the Flemish Beauty and Easter Beurre pears; they have degenerated here, but in California are as good as ever. Mr. Knight's opinion, that every tree propagated from a seedling was a part of that tree, and perished when the lifetime of the original tree expired, has proved fallacious.

"E. W. Wood said that no one could deny that fruits degenerate, whether from disease or other causes. He did not agree with Mr. Hovey in regard to the peach, but thought we cannot cultivate it as formerly.

"The Hovey strawberry was perhaps more generally grown in New England than any other variety thirty or forty years ago, and there is no better variety to-day, if we could grow it, but we cannot. Mr. Hovey's own specimens are not up to the standard of twenty-five years ago. In later years the Wilson has been more generally grown than any other kind, but it is now being discarded."

A Troublesome Insect Pest to the Pear.—The English pear-growers report that the maggot of a small fly, Cecidomyia nigra, is proving troublesome. They lurk in the core and throw out tunnels to the surface.

The Apple Crop in the East.—It is said that the apple growers in the East have had one of the best seasons they have had for a long time. Maine alone has shipped to Europe about 135,000 barrels. Every steamer up to the end of April took some away. The Russets are the latest shipments. The growers received from $1.25 in October, to $2 in January, per barrel. By the first of May they brought $4 in the Liverpool market.

Alpine Strawberries.—A few years ago the "Mexican Everbearing" strawberry, as it was called, had a great run. It did remarkably well in cool boggy ground near Detroit, but did not do so well in the dryer soil of other localities. It was simply a variety of the Fragaria vesca, to which species all the Alpine varieties belong. It is not at all likely these will ever be grown to any extent for market. There would be no profit in them. Though more delicious than the ordinary kinds, the prices would have to be measured by regular strawberry prices, and the higher figures required for these would be against their success as a commercial speculation. But we never could understand why those who love amateur gardening should not have a good thing because there is no sale for it in market. Any one who has a piece of rich spongy ground, and in a spot not too hot during the fruiting season, would enjoy these Alpines.

These remarks are suggested by the fact that the French are very fond of Alpine, and new ones are continually being offered there. Just now they are a little wild over a novelty they call "The Generous," which, as with our new strawberries, is "to beat all its predecessors." The fruit is about 1¼ inches long, by ½ inch wide—about like the aforesaid "Mexican" has, and is to bear with equal abundance through the whole summer. As these come tolerably true from seed, they are offered of this variety, as well as plants, by the French growers.

The Lincoln Blackberry.—It is claimed for this that it is a very early variety, and "of the finest quality of fruit ever obtained in a blackberry." It is a wild plant, found about two miles from President Lincoln's monument near Springfield, Illinois.

A Large European Grape-vine.—The *Society of Arts Journal* claims that the largest vine in the world is one growing at Oys (Portugal), which has been in bearing since 1802. Its maximum yield was in 1864, in which year it produced a sufficient quantity of grapes to make 750 litres (165 gals.) of wine; in 1874, 665 litres (146⅓ gals.); and in 1884, only 360 litres (79¼ gals.). It covers an area of 494 square metres (5315 square feet), and the stem at the base measures 2 metres in circumference.

Sea Kale.—This vegetable is rarely grown, chiefly, as we believe, because few people know how to cook it properly. It is one of the meanest of dishes when meanly cooked—while one of the most enjoyable when it comes from the hands of a master in the culinary art. The Philadelphia *Public Ledger* gives the following advice in regard to it:

"Sea kale is a most delicate green vegetable. Pick it out sprig by sprig, wash it well and tie it up in bunches. Place these in a large stewpan full of fast-boiling salted water. As soon as the stalks are soft, lift each bunch carefully out of the water and lay them all on a sieve, cover them with a cloth and place the sieve in a hot place. In ten or fifteen minutes all the water will have drained off, when the bunches should be untied, the sprigs delicately disposed on a napkin in a dish and served with plain drawn butter or salad dressing in a sauce boat."

A New Vegetable—"Choro gi."—We are indebted to the courtesy of Messrs. Vilmorin-Andrieux & Co., of Paris, for the following particulars respecting the new vegetable, "Choro-Gi," extracted from M. Paillieux's work, "Le Potager d'un Curieux:"

"Stachys affinis is a native of Northern China and Japan, and is a perennial plant, forming numerous underground tubers; formed by a succession of nodosities, somewhat resembling the tops of the swollen roots of Ærrhenatherum elatius var. bulbosum. Stem single or branching, erect or in a prostrate position at the base, quadrangular, with hispid hairs on the angles, and from 10 inches to 16 inches high. Leaves opposite, long-stalked, rugose hispid, with a heart-shaped base, toothed, and crenate; the lower ones oval, the upper ones oval-oblong, and gradually becoming smaller as they approach the top; flowers sessile, borne 4-6 in distinct pseudo-whorls. In our ground the plant has proved extraordinarily vigorous, and has yielded an abundance of tubers, but we have only observed a few flowers on more than fifty fully-developed plants.

"In the spring of 1882 we received from the Acclimatization Society a box containing tubers of Stachys affinis, which had been sent to the society by Dr. E. Bretschneider, Physician of the Russian Legation at Pekin, but all but five or six tubers perished during the voyage. Such, however, is the ease with which it is propagated, that the loss of the greater part did not grieve us. From the first year each tuber planted on an old hot-bed gave us a satisfactory increase, and from the second year the plants left on the bed yielded from 200 to 300 per cent. By this means we were enabled to send plants to the vegetable section of the Acclimatization Society, and, following the example of the Japanese, to introduce into our pickles a pretty large proportion of tubers. The result has been very satisfactory.

"For five or six years we had in vain asked for 'Choro-Gi' in Japan. The plant is hardy, having stood without protection through the winter of 1882-83, though it is true that winter was not a very rigorous one. Belonging to Northern China, it will, however, probably stand the hardest winters. The tubers of 'Choro-Gi' are used in Japan for pickling in plum vinegar, but are not used in the same way in China; Dr. Bretschneider, on being questioned by us on the subject, however, could not say how they are prepared for the table. The tubers, which are small, French-white, and of fine shape, have no flavor of their own, but readily absorb the aromatic vinegar in which they are immersed. We recommend that they be mixed with Angouina (Trichosanthes anguina), Tropæolum tuberosum, and Mioga (Zingiber Mioga, or Amomum Mioga of Kæmpfer). The sight of the nice small tubers of 'Choro-Gi' is sufficient to induce us to consign them at once to the frying-pan, either in their natural state or plunged into paste and seasoned with lemon-juice. Cooked in the latter way particularly, they make an agreeable dish, which can be made use of the whole winter. We must observe, however, that the tubers cannot be kept out of the ground, or out of a sand-heap under cover, as, if exposed to the air they soon blacken and wither, and in a few days are lost."

Potato Soup—is an excellent thing when nicely made. It requires some practice to turn out potato soup nicely, but the general plan is simple enough; the cooked potatoes are broken up and boiled in a smallish quantity of water, with a small proportion of onions and turnips, the flavor of which should be slight. Generally speaking, one small onion and one small turnip will suffice if cut up small; but, of course, the quantity must be proportioned to that of the soup. Let them all be boiled a reasonable time, and then beat the pulp through a colander; or, if time presses, beat it in the pot with a large spoon. Now add as much new milk as the quantity of water added originally, and a little flour first beaten up with cold milk to give smoothness and whiteness. Add loaf-sugar, salt, and nutmeg. To determine the right proportions of these is a matter of taste and judgment.—*Gardeners' Magazine.*

SCRAPS AND QUERIES.

Fruit or Vegetable.—A New York correspondent says: "Will you kindly inform me whether a tomato is classed as a fruit or a vegetable?" The horticultural answer is, that it is a vegetable. If the question were put to a botanist he would answer that it was a fruit. He would say the same of a pine cone with its seeds, or of a spike with its hay seed. On the other hand he would say that a pear was a vegetable, if the question were one that bore on the distinction between plants and animals. We see that the answer depends on the view of the questioner. In the household a fruit which is generally eaten cooked would be a vegetable; that which is generally eaten uncooked would be fruit. We use the word "generally," because the lines sometimes overlap.

A squash and a water-melon are both fruits botanically, but the squash is classed conventionally as a vegetable, and the water-melon as a fruit; the cooking idea, evidently deciding the case. Much depends on the class in which the subject under discussion was originally introduced under. The tomato was first introduced to gastronomy by the cook; in subsequent years it has been found good to eat raw. But the law of priority gives the class to the cook; it is a vegetable.

It is the general or original uses of the article that decide its class when we come to arbitrary classification, outside of science.

Mice Eating Osage Orange Hedge Plants.—A correspondent who suffered much last winter, writes to know what will destroy ground mice or moles that ate off his Osage orange plants.

It is believed that where there is no grass or weeds for the mice to harbor in, and the plants kept wholly clear of weeds and trash, the rodents are not troublesome. To kill them, peas soaked in arsenic water are effective. To drive them away, tow or cotton dipped in gas tar, and put in plentifully along the line is useful, as most burrowing vermin dislike the smell and keep away. But starving creatures will risk a good deal, and we doubt whether this would be a complete security.

Heating a Pit.—"E. D. W.," Independence, Iowa, asks: "Can you give me any information in regard to the most economical plan of heating and watering a forcing-house, 12x24, built mostly under ground?"

[For so small a house, a brick flue would be the most economical; the furnace at one end and the chimney at the other. Watering will depend on many circumstances. If there is a chance to let a flow of water through a pipe, watering may be done with a hose, and especially if the plants are vegetables or flowers like carnations or roses planted in benches. But if the plants are in pots, the ordinary watering pot had better be employed, because so many plants will need watering when others do not, and it is an injury to plants to give them water when they do not need it.—Ed. G. M.]

FORESTRY.

COMMUNICATIONS.

THOUGHTS ON PRACTICAL FORESTRY.

BY THOMAS MEEHAN.

Personal interest will ever be the leading factor in progress. Public spirit induces the general movement—but what good is public spirit to me? is the prevailing thought with the masses. The Forestry Association will do well to appeal to patriotism,—it will do still better to show that direct individual interest is closely allied to the general good. In the first branch of the subject literature abounds, and efforts have been fruitful—in the last one much has yet to be done. Few farmers, or landed proprietors, have been brought to recognize a direct personal interest in setting out trees. We offer to reduce their road-tax if they will set trees along the roadside, but the practical answer is that, even with that inducement, "It will not pay." We offer trees for nothing if farmers will set them out, but the answer is still, "It will not pay." We say we will endeavor to reduce the taxes on your forest-land, but there is the same answer, "Not even that will make it pay." It is here that the Forestry Association has to select the ground for the battle. In my opinion, the fight can be safely made, and the victory won.

Long ago, in the *Penn Monthly*, I showed that we could expect little from individual effort. We may show a young man of thirty that a plantation of twenty-five or thirty acres would be immensely profitable when he reached sixty. It would be a nice laying up of money for old age; or a capital life-insurance for his family, in case of an earlier death. But, few men care to deliberately lock up ground for a century or half a century. In a new country like ours, changing conditions make it probable that, before that time, land may be worth much more than the forest, long before the forest has reached market-value. The minds of few men are proof against these considerations.

The remedy is in co-operative associations. A stock company should be formed, large enough to secure tracts of sufficient size to employ a force to look after the trees properly. The stock would always be worth more than its added interest, because the trees are nearing their market-value. If one wanted money before the trees were mature, the stock would find a ready market. Of course there would be details in the carrying out of such a project that would require good judgment. The land to be secured might be in locations that would be improving, so that after the century of timber, there would be money in the ground also. This would give value to the stock as time rolled along. The trees best adapted to the location would also require good judgment, and there are many other similar matters of detail, but which an expert in forestry-management could work out for such a company.

The only objection I ever heard to such a measure is the danger of loss through forest-fires. But there are no forest-fires in new forests. Fires only become serious in old forests, where, from the mass of old and dead wood everywhere, the flames are cordially invited.

The best of lessons are given by example. No teaching has the force that comes from that which has been done. It can be easily shown that forest planting is very profitable on a fifty-year scheme. Individuals cannot work thus far ahead, but corporations may. Why cannot *Forest Leaves* advocate my plan? *Germantown, Philadelphia.*

[The above was written at the suggestion of one of the editors of an excellent little magazine in the interest of forestry, published in Philadelphia under the style of *Forest Leaves.* The question was, How could forestry best be advanced?—Ed. G. M.]

"WOODMAN, SPARE THAT TREE."

BY CYGNUS.

After an absence of twenty years from my native State and county, nothing on my return strikes me so painfully, as the rapid and wholesale destruction of the native forests, once the pride and glory of old Tioga. I have seen nothing like it, in other States, where large tracts of woodland, now of almost priceless value, are carefully preserved; tree cutting being done with great care, and due selection.

The second-growth timber is carefully fostered, and generally free from underbrush, and the prospect is, in the State of Illinois at least, where the writer spent several years, that the next generation will have something wherewithal to fashion the innumerable articles which minister to man's luxuries and to his necessities. If that ruthless wood cutter would stop for one moment and consider the ten thousand uses to which wood is applied, from the cradle which receives his infant form, to the coffin in which his mortal remains are carried to their last resting place, he might perhaps look upon a tree as something other than his natural enemy, which it seemed to our forefathers, who must have bequeathed to their children's children what seems to have become a disease; to such an extreme is the wasteful destruction of our forests carried on. Steep sterile hillsides, which would scarcely make a sheep-walk, are stripped of every vestige of verdure, burned over, and left blistering in the sun, to be washed by the rains of heaven, until there is nothing left but the frame-work of the rocks; and still the work goes on. Wagon loads on wagon loads, convey away to the nearest railroad choice hard wood, of large size and beautiful grain, to be converted into fire-wood. Every spring sees innumerable logs, rolled into huge piles, at the nearest saw-mill or water-course. They float away on the streams! Their ashes bleach on the hill tops! Their blackened stumps bear mute testimony against the cruelty of the destroyer of these monarchs of the forests, who from their lofty heights have looked down upon generations of man, and all his works, his conquests and his defeats.

Veritable Rachels are they "mourning for their children, and will not be comforted, because they are not!"

Who that looks thoughtfully on, but must question to himself, what is to take the place of wood, when the tireless energy of the Yankee nation has used it all up? It takes from forty to fifty years for a tree of even ordinary size to grow, but, at the present rate of destruction, ten years more will see our land as treeless as modern Spain. The small water courses and springs are rapidly drying up, and the volume of our river reduced one half, so old people assert. The devastating flood will wash away the unprotected land from the hillsides, and barrenness and bleakness will be the result. So accustomed are we to the use of wood, that we have come to look upon it as we do upon the sunlight.

We will never realize its full value until we begin to suffer for the lack of it. Where, after a few years, shall we find timber for railroad ties, which cover the land like a net work; for telegraph poles, which already encircle the globe; for the ships which ride on many waters; for houses and furniture, and agricultural implements? For the ten thousand uses to which wood is applied? And echo, answers, where? Verily Ichabod! is written all over our hills and valleys. Their glory has departed. "But, oh! the pity of it, Iago, the pity of it!" *Mansfield, Pa.*

[No one will read this feeling plea for trees and tree culture, without sympathizing with the lady who makes it, and will, we are sure, be pleased that we have given it a place in our columns.

When we come down however to the practical work of preserving old forests and planting new ones, the matter takes on an entirely new aspect. Our views on this side are so well known that we need not repeat them here.—Ed. G. M.]

EDITORIAL NOTES.

Unscientific Forestry.—*Scribner's Magazine* is giving a series of extremely interesting papers on forestry from the pen of Prof. Shaler. It is to be regretted that so eminent a teacher, and original observer as Prof. S. should have marred the force by a repetition of the sorry stuff common to the penny-a-liner, which passes current as "science" in the secular press, in connection with "rainfall and climate," and which we are sure he would not adopt, if he had applied his own vigorous intellect to an examination of the facts.

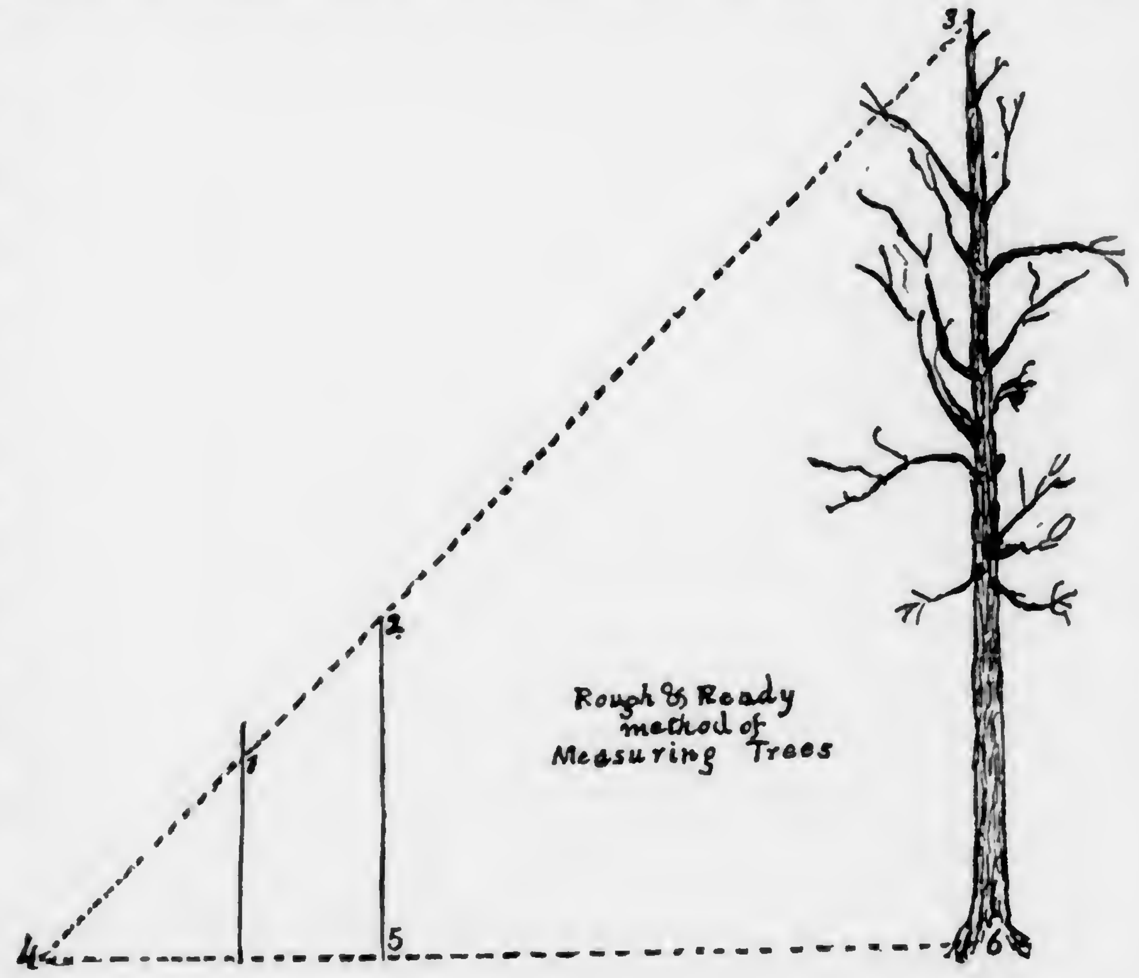
One has only to cast his eye over a map of the globe on which we live, and note the immense area of water as compared with land, from which an enormous evaporation is continuous, to understand that this moisture must come down again in the form of rain, though there was never a tree on the face of the earth; and when he reflects on the many hundreds of square miles of grassy prairies on which rain fell continuously for probably many hundreds of years, without a tree to "attract the moisture," and "induce the rain-fall," he must understand what supreme nonsense it is to teach that trees are the cause and not the consequence of climate, and that the "reckless destruction of our forests must result in utter sterility."

We all want to see forests planted, but those of us who are laboring in this direction, feel our efforts continually thwarted by this silly stuff which the practical man never believes, and hence laughs at the whole scheme.

Outside of this misfortune, the papers are admirably written, and full of useful information. It was a happy thought in Scribner to engage Prof. Shaler in a task like this for their very popular magazine.

Measuring Trees.—There is a great amount ingenuity exercised to invent instruments that will readily measure the heights of trees or other objects of similar character. But the traveler need take nothing along with him but a tape line and a jack-knife. First cut a stick thick enough to drive in the earth. Let it be four or five feet long, and drive it into the earth at any spot convenient, only being careful to have it on a part of the ground evidently level to the base of the tree. This will be the stick at 2. Drive another of about the same or any length at any indefinite distance from 2. This will be 1. Then with the eye and a temporary guide find on 1 the exact spot on its surface that will be in exact line with 2, and the top of the tree at 3. We have then a straight line from 3 to 2 and 1. Then, by the eye at 2, striking the spot at 1, we find where the line will strike the earth at 4. We have then a right angle triangle 2, 4, 5. Now we call into our aid the well known geometrical theorem that the proportions of right angle triangles are always the same. With our tape line we find the base line 4 to 5, say 10 feet, and the perpendicular 5 feet. Then we measure on the ground from 4 to 6 and find it, say 100 feet. The whole question then resolves itself into one which the well known arithmetical rule of proportion readily solves:

If a base line of 10 feet gives a perpendicular of 5 feet, a base line of 100 gives a perpendicular of 50 feet, which is the height of the tree. This may not come within an inch or two of absolute accuracy as a regular instrument would, but it serves all practical purposes.



Reforestation of the French Mountains.—The French Government, on the recommendation of the Minister of Agriculture, has been recently inquiring into the feasibility of reforesting the denuded French mountains, but it is said they could reach no more practical solution of the question than we can in our country.

The Great Enemy to American Forestry.—One of the most common-sense papers on forestry that we have read for some time is in the tiny little *Forest Leaves*, from an anonymous author, "J. H.," from which we take the following:

"The loss in timber from forest fires in New Jersey, on a low estimate, has averaged $1,000,000 per year for the last fifteen or twenty years. The loss, however, is much more than the mere value of the wood. The soil is so impoverished by these periodical burnings, which deprive it of all vegetable matter, that its incapacity for producing timber is much diminished. There is also a great depreciation in the value of land, because of the danger of fires, whether it be as timber-land, or for occupation or improvement, and considerable damage is done to the many valuable cranberry-bogs which are scattered throughout the forest, not to speak of the danger to buildings, habitations, and even human life.

"The causes of these fires are various—those given for the 54 fires of the census year are as follows: Clearing land, 7; locomotives, 28; hunters, 6; malice, 7; coal-pits, 6. It will be noticed that more than half were caused by railroads. Neither of the two great fires of this year (1885) were caused by locomotives—that at Barnegat starting six or seven miles from any railroad, and that at Atsion, in a meadow, also far from a railroad, either from the carelessness of hunters or berry-pickers, or through malice. Mr. Elmer attributes many of the fires to carelessness in clearing up land. Many fires no doubt, start from coalings, and it is common to hear it stated that some of these are started intentionally, in order to keep the coalers and wood-choppers at work, since timber burned over must be cut at once, whereas otherwise it would be left to grow and increase in value. Those caused through malice are often the result of chastising, or holding under surveillance timber thieves, by no means uncommon in the pine forests.

"Of the various causes, the most frequent one is the one which is, apparently, most easily prevented, although it is not unlikely that the damage from this source is somewhat overrated, for these fires are soonest detected and checked. Some railroads, notably the West Jersey and the Delaware, Lackawanna & Western, have already taken the matter in hand. The plan followed, and apparently with success, is, to clear away all timber for a width of 100 feet on each side of the track; to plow a furrow or two close to the outer edge of this space and then fire the space in the fall, and keep it mowed and cleared, if necessary, through the summer. Were this plan adopted by all railroads, and the engines furnished with suitable spark-arresters, danger from this source would disappear, as would the constant suits for damages which are probably much more expensive than the remedy."

How Forests Follow Rainfall.—A contemporary says: "It is significantly said of the great Texas drought, which extends across that State for several hundred miles, that it decreases in severity as it approaches the pineries. That is a point for 'Arbor Day.'" Which is, that people should not plant trees for profit where dry climates exist. The pineries only establish themselves where there is a fair annual rainfall with some certainty.

Pinus ponderosa.—A correspondent reports that there are very large forests of this pine near Flagstaff, Arizona.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

A USE FOR THE WILD ORANGES OF FLORIDA.

BY J. J. H. G.

A friend sent me two months ago several specimens of native wild oranges, from Orange County, Central Florida. They were of medium size and of the rich color of the Mandarin. Some used instead of lemons in "lemonade" gave a splendid acid with a slight bitter taste. If this taste could be removed by some simple process I should decidedly prefer their acid to that of lemons. But the special forte of these wild oranges to me is the remarkable richness and volume of the perfume. A single specimen has proved sufficient to so pervade a room 14 by 16 with its rich odor that any day during two months I have had it a stranger would detect it on entering. If they average as good keepers as those of mine, why should there not be a market for them because of their fragrance? The fruits of the earth address the nose and eye as well as the mouth, and I know not why a single sense should monopolize them. *Marblehead, Mass.*

THE HYBRID PLUMS.

BY H. E. VAN DEMAN.

Your card of the 5th was received, and the article of Prof. Munson on plums and peach hybrids and your comments on same in GARDENERS' MONTHLY read. No one denies that there are sports and monstrosities, and it is very certain that there are hybrids. If fertility in hybrids is the rule, I should be glad to be set right in my ideas by a statement of facts and cases. The H. P. roses are usually sterile. I knew from observation in Kansas, of a guinea hen laying eggs that were fertilized by a black Spanish cock, (chicken) several of which hatched and three of them lived. One that I knew was a female and laid eggs but none of them ever hatched, although often tried.

All the mules between Muscovy and other ducks that I have ever known were sterile. Because your case of Halesia and others which you and all of us know to be monstrosities in both the vegetable and animal kingdom exist as facts, it is no reason that the cases Mr. Munson gives are not mules.

I think it is advisable to be very cautious regarding all these matters and I know you are working on that plan. Perhaps we will arrive at definite conclusions in due time.

U. S. Pomologist. Washington, D. C.

[Mr. Van Deman must have overlooked the fact stated in the Editor's remarks, that the structure of the flowers that he examined—the structure of the flowers—proved it to be a monstrosity and not a hybrid.

As to the fertility of hybrids in the vegetable kingdom, it seems strange that a Department like that of Agriculture at Washington does not keep on record the progressive literature of a subject like this. Mr. Van Deman could then be easily set right in his ideas by statements of facts and cases, already abundantly exemplified. We would suggest that among other documents the Department purchase a copy of the New York *Independent* of August 21st, 1884, if it does not already have access to the original papers on which that exhaustive essay is founded. We think no one can read that paper without being convinced that there is no foundation whatever for the sweeping generalization that hybrids are usually sterile. Certainly no one has ventured to show that the conclusions reached in the essay referred to are not sound. Certainly there are sterile hybrids, as there are sterile pairs, and even sterile families in the same species, but it would be just as fair in the face of the numerous facts to the contrary, to say in the latter case that mankind is generally sterile, as to assert the general sterility of hybrids.—Ed. G. M.]

EDITORIAL NOTES.

THE SPRING OF 1887.—The Spring in Philadelphia, is probably one of the latest on record, and is phenomenal. The first Dandelion blossoms did not open till the 28th of April. The first of May we usually have an abundance of lilacs in bloom, though some years they miss. This spring the leaves were not fully developed before May 12th. It is fully two weeks behind an average season, and a month later than it is sometimes.

HYBRIDS AND CROSS-BREDS.—The term "hybrid" has been carefully reserved for mixtures between what botanists would regard as species—and the mixtures between garden varieties are regarded as "crosses." Though botanists have themselves come to look on species as not different from varieties except in degree—a species being but a variation more widely separated from an original parent form—the difference is worth retaining as of much value in practical discussions. We note however that the *Gardeners' Chronicle* is beginning to abandon this distinction. It calls a cross between the ash-leaf and the white elephant, as a case of a "Hybrid Potato." It may possibly be an inadvertence.

ROOTS OF THE SHEPHERDIA: A SCIENTIFIC PUZZLE.—Recently we received for examination a mass of roots of Shepherdia argentea, in which the smaller roots were completely necklaced with the numerous "beads" about the size and appearance of grains of wheat. Cutting them across, and examining with a lens, expecting to find a minute egg or "worm" in the centre, no trace of insect work could be discovered. Supposing that what is not animal must be vegetable, they were turned over to the eminent specialist in minute fungi, Mr. J. B. Ellis, of Newfield, New Jersey, who reports that there was no trace whatever of fungi, and no doubt eggs of some insect would be found, though he failed to detect any. They were then sent to Prof. Riley, with the following reply:

"U.S. D'P'T OF AGRICULTURE. DIVISION OF ENTOMOLOGY, WASHINGTON, D. C., May 9th, 1887.

"Thos. Meehan, Esq., Germantown, Phila., Pa.

"Dear Sir—In the absence of Prof. Riley I beg to acknowledge the receipt of yours of the 5th inst. The roots of Shepherdia which you sent show no trace of insect injury; neither are they infested by any fungus. The swellings have all precisely the same appearance as those made by nematode worms of the genus Anguillula but no trace of the worms can be found. I doubt if any damage can result from the introduction of these plants. Yours truly,

L. O. HOWARD, Assistant in charge."

It would seem from this that we are possibly to look to some vito-chemical cause, such as produces the potato tuber with its starch, for the cause of the singular appearances.

There is evidently plenty yet to do for those naturalists in looking after new facts in science.

HISTORY OF PALAFOXIA.—Among the pleasant readings in the *American Agriculturist* are always the notes of Prof. Thurber who when a younger man was one of the explorers of the unknown portions of our Continent. Every now and then he brings in some reminiscence of those earlier days, which make us wish he would give more of them. We extract the following in reference to a well known hardy annual as illustrative of what we mean:

"In the writer's horticultural experience it has happened that he has made the acquaintance of a number of plants in the cultivated state, and afterwards has met with them in their native localities, and, of course, growing wild. In the majority of cases the plants in cultivation were larger and more brilliant in their flowers than the same when growing wild. When we came to a water-hole on the road between El Paso del Norte and the City of Chihuahua, in Northern Mexico, surrounded by a thick growth of plants having bright, rose-pink flowers, we were glad to find it to be the same that we had known in cultivation as Hooker's Palafoxia, P. Hookeriana, and quite as large and as showy as we had seen it in gardens. The plant belongs to the Aster Family (Compositæ), and bears numerous aster-like heads of flowers upon branching stems of 1 to 4 feet high. The flower-heads have pinkish, or rose-purple rays, making it a showy and pleasing hardy plant for the garden. The engraving of the upper part of a plant gives its general appearance. Upon looking up what later botanists have had to say about this Palafoxia, a genus named in honor of a Spanish General, José Palafox, we find that the plant in question is not a Palafoxia, but has been placed in an allied genus, Polypteris, a name from the Greek words for many and wings, in reference to the structure of the pappus upon the fruit. The proper botanical name is Polypteris Hookeriana, but this will not prevent the use of Hooker's Palafoxia as its garden name. According to generally accepted rules, it sometimes becomes necessary to refer a species to a genus different from that in which it was originally placed. It is always to be regretted, as many find it more difficult to unlearn a name than to learn a new one."

PEACH YELLOWS.—Discussions continue on this subject, and even in well informed channels the arguments go on as if nothing had been learned. Surely it is a gain to know as we do from the work of Prof. Penhallow, that in all cases of peach yellows there is a deficiency of potash in the wood. It is also a gain to know, for certainty, that the disease is confined to a certain latitude—that it does not exist in the Southern States. This last statement is open to an argument on strict construction. The Editor believes he has seen it in a few cases South—but be this so or not, it is incontestible that at least it is extremely rare there. These being certainly facts, we have surely learned something. The disease cannot be simply starvation, because there is as poor peach land, and as much neglect of trees South as anywhere. And as we find a want of potash in trees, where the soil abounds in potash, the inference must be undeniable, that it is the vital power of the tree that is affected. We have certainly learned—thanks to the labors of scientific observers—that, to discover the cause, we must search for those influences that affect the life of a tree. It is certainly a great gain, to be brought within so small a circle.

VITALITY OF SEEDS.—Every once in a while a discussion arises on some popular opinion, and it is shown to be either wholly baseless, or else supported on evidence of no value. But again and again it comes up, as if it were utterly impossible to finally check an error after it has once been started. The vitality of seeds is one of these. It has been shown over and over again that there is no evidence, not impeachable, that seeds will live for centuries in the earth, till brought to the surface to grow.

Evidence which might be readily obtained at hand by the disputants is neglected, while statements made by people nobody knows, who live a thousand miles away, are paraded as all that one needs to know.

In a recent paper, very well written by a Detroit correspondent of the *Country Gentleman*, the following appears:

> "In the northwestern portion of Michigan where the extensive forests of pine have been cleared, there is observed to start into growth from the seed, dense groves of scrub oak which attain the height of three to twelve feet. During the lifetime of the pine no oak was known to grow there, but as soon as the pine disappeared the seeds of the oak, which must have laid dormant, no one knows how long, sprung into life in localities where no oaks had previously been found within a radius of a hundred miles."

Now whatever seeds might live long, the acorns of the scrub oak, Quercus Banisteri, would be the least likely. The most expert treatment by the seedsman will not keep them a year in growing condition. Still, if the fact could be proved, that they had kept "nobody knows how long"—at least fifty or a hundred years—it would have to be believed, no matter how impossible beforehand it might seem to be. Now, if these acorns, as large as boys' marbles, were everywhere in the ground but a few inches from the surface, so thick that plants appear in dense groves everywhere when a pine forest would be cut down, it would be the easiest thing in the world to dig up a barrowful of the earth, put it in a wash-tub with water, stir it about briskly, and have all these acorns left on the surface of the mud as it settled.

There are plenty of these pine forests left; why does not some one instead of wasting people's time by the hour reading and their own by writing, spend an hour in testing the seemingly impossible?

The Editor has often tried to get seeds in this way out of clay from wells dug near those said to have produced plants when brought to the surface, but could never find the trace of any, and he ventures to express his belief that nobody ever will.

Seedless Oranges.—The *Gardeners' Chronicle* says, that the usual forms of orange planted for fruit, are not adapted for growing for cut flowers. The plants suffering from the constant cutting. The Saville or Bitter orange is grown for cut flowers. These are called Bigaradier by the French, and a seedless variety is by far the most floriferous.

Rapid Changes in Climate.—Travelers in Alaska find local changes of climate evidently very rapid in comparison with such changes in more temperate regions. Parts of the country that a hundred years ago were covered by ice sheets now have young forests growing thriftily over them; while tracts of country now ice covered, or covered by glacial drift, were certainly covered by luxuriant vegetation within the century. The changing character of the ice sheets bring corresponding changes in atmospheric currents, and thus parts of the country not so cold but that forest trees could grow well, find themselves under temperatures fatal to arboreal life. Hence dead forests are common, and living forests spring up in other places where only dead forests existed for years before. The heavy air—made heavy by cooling when coming in contact with the ice sheets—rolls down toward the equator, from whence the warmer and lighter air from the higher currents flows in to fill the vacuum caused by southern flow of the heavy column. Hence trees and vegetation skirt the edges of the ice sheets, except in the deeper channels and gulches through which the heavy cold air flows. Thus it is that as a glacier flows or recedes, a ravine which in one age is the channel for a continuous Arctic current, may be the channel for a warm current in another. Alaska furnishes an admirable field for the study of these rapid changes in local climate, and enables us to understand much of Arctic phenomena that seems mysterious in the Old World. It is reported that not many centuries ago, the northern part of Iceland and Greenland was cultivable, but that a change of climate occurred that rendered such culture impracticable. Scientific men usually use the word "reported" when referring to this fact, and facts are continually being placed on record as they may seem to bear for or against this statement. Recently it has been recorded that in Iceland, at the station known as Akureyi, there are a few trees existing of the mountain ash, Sorbus aucuparia, that are very old and about 25 feet high, while smaller trees, with birches and other things, cannot now get beyond the stature of dwarf bushes; and it is assumed, and with good reason as Alaskan experience affords, that these survived the cold currents that destroyed all other of their friends and neighbors. The coal, too, is simply lignite of comparatively modern origin, and formed of species of Populus now existing on the American continent, but which seems to have been wholly swept away by the deluge of cold air which overspread these regions. The facts are particularly interesting to science as showing that geological periods, as they may be termed, are likely to be much shorter in the Arctic than in the temperate regions—that data collected in one part of the world may not have the same interpretation in the other—and that the rolling away of cold, heavy air toward the equator, may, by the

lighter warm air that must fill the vacuum, necessitate a higher temperature and possibly an open sea at the poles.—***Independent.***

Double Spathed Calla.—Mr. A. C. Oelschig, Savannah, Georgia, sends a specimen of the double spathed Calla, the first we have seen this year, though sometimes they are more frequently met with. The white spathe of the Calla is but a leaf, blanched, the true flowers being at the base of the yellow spadix. In these cases the plant has simply produced two instead of one blanched leaf.

The Lattice-leaf Plant of Madagascar.—This curious water plant which had the name of Ouviranda fenestralis, is found to belong to the older genus of Aponogeton of which another water plant, A. distachyon, is a well known representative.

SCRAPS AND QUERIES.

Hybrid Plums.—Mr. Hillenmeyer kindly sends us specimens of his hybrid Plums. The flowers are exactly like those sent to us by Mr. Munson, from Denison, as the Blackman, and are simply monstrous flowers, and not the result of hybridization, so far as we can understand. It is simply a case of abnormal carpellary development.

Propagating Male Plants.—"Dr. K.," Allegheny, Pa., inquires whether the male or female form of a diœcious plant can be continued indefinitely by cuttings, grafts, or buds? It can. The Chinese Juniper in nurseries is simply the male form of the Chinese species, and has been continued under cultivation for a number of years. Of the millions of plants, all, so far as we know, have continued male.

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

The Origin of Flowers.—

"I sometimes think that never blows so red
The rose, as where some buried Cæsar bled;
That every Hyacinth the garden wears
Dropt in her lap from some once lovely head.

And this reviving herb, whose tender green
Fledges the river lip on which we lean,
Ah, lean upon it lightly! for who knows
From what once lovely lip it springs unseen!"
—*Omar Khayyam.*

United States Department of Agriculture.—The question, What good can result from this Department? is often asked by those who regard it as in some measure in competition with State or National Agricultural Societies. But it is only when it places itself in competition with them that it is seen at a disadvantage. There is an immense amount of useful work to be done which only the power of government can do, and when thus limiting itself it is eminently useful. But this original work requires original minds in those who have charge of the work. With such men as Vasey, Scribner, Riley, Saunders, and some others who might be named, there is no question about the eminent usefulness of the department, and Commissioner Colman is to be congratulated on the success of its administration under these lieutenants. Much has recently been said in regard to the new departments of Forestry and Pomology in contrast with the State societies, but there is no more reason why these should be doing over again work done by them. It was the want of perception of this fact in former years, which produced such indifferent results, and not because there is no need of such divisions. If the incumbents recently appointed discover their true mission, there is no reason why they may not share the praise accorded to their older co-laborers. Objection is also sometimes made that the department spends money on matters that can have little influence on the progress of agriculture,—no result but to make Congressmen popular with their constituents.

Unfortunately the great mass of the people do not feel interested in these scientific developments that are surely for their ultimate good. These people have a right to some present amusement while the world is going on—will insist on a coating of sugar while swallowing the untasted pill. Numerous grand enterprises are languishing because the popular element is overlooked. The grand success of the Royal Gardens at Kew is due to the genius of a Hooker, who, while aiming to develop the highest type of botanical science, never forgot to cater to the wants of the mass of the people. Kew is popular with peer and peas-ant. It would soon lose the support of the English Parliament were it not so. Progressive agriculture in America, no more than advanced botany at Kew, may see the utility of some of what is done; but if the result is to get the approval of all the elements that have to pay for their support, it proves the effort to have been wisely made.

The Azalea Trade.—Some idea of the enormous trade in flowering plants, when once a firm has got to be well known, may be inferred from the fact that in the closing up of the old firm of Linden at Ghent, Belgium, last month, 100,000 azaleas were sold.

An Overstock of Good Gardeners.—Either the prize must have been tempting, or gardeners must be abundant as well in Germany as elsewhere, when 268 applied for the position of superintendent of the Central Cemetery at Hamburg.

Traveling with the Driver.—Young men on starting out to travel on stage lines used to get the advice to get a seat by the driver. It is not however always a success, for some drivers won't talk while others talk more than they should do. The writer of this took several days' ride through California on the top with the driver, and the only words that this driver spoke were once "yes," and another time "Fresno." An English traveler relates that last year he was riding through Greenwood Cemetery, and calling the attention of the driver to some pretty specimens of the weeping variety of the English Beech, was told "Yes, them are the Californy trees, they were fetched all the way from Frisco." This is a case of too much talking.

The India-rubber Plant.—Everybody knows the India-rubber plant with its thick leathery leaves, at which *Punch* gets off the following joke:

> "The Honorable Tom: 'Haw! This is, I suppose—er—the new tobacco that everybody's growing.' Elfrida de Smyth: 'Oh, dear no. That's an India-rubber plant! The Honorable Tom: India-rubber! Bai jove! Now I'd have bet any money it was real. What—er—wonderful imitations there are now-a-days!'"

St. Dunstan and the Apple Tree.—In Southeast Devon and the neighborhood, a curious legend is current among the farmers respecting St. Dunstan and the apple trees. It is said that he bought up a quantity of barley and therewith made beer. The Devil knowing that the Saint would naturally desire to get a good sale for his beer, which he had just brewed, went to him and said, that if he would sell himself to him, then he (the Devil) would go and blight the apple trees, so that there should be no cider, and, consequently, there would be a far greater demand for beer. St. Dunstan, naturally wishing to drive a brisk trade in his beer, accepted the offer at once; but stipulated that the trees should be blighted in three days, which days fell on the 17th, 18th, and 19th of May. In the almanacs, the 19th is marked as St. Dunstan's Day, and, as about this time the apple trees are in blossom, many anxious allusions are generally made to St. Dunstan; and should, as is sometimes the case, a sharp frost nip the apple-blossoms, they believe they know who has been at the bottom of the mischief.—*Folkard's Folk-lore.*

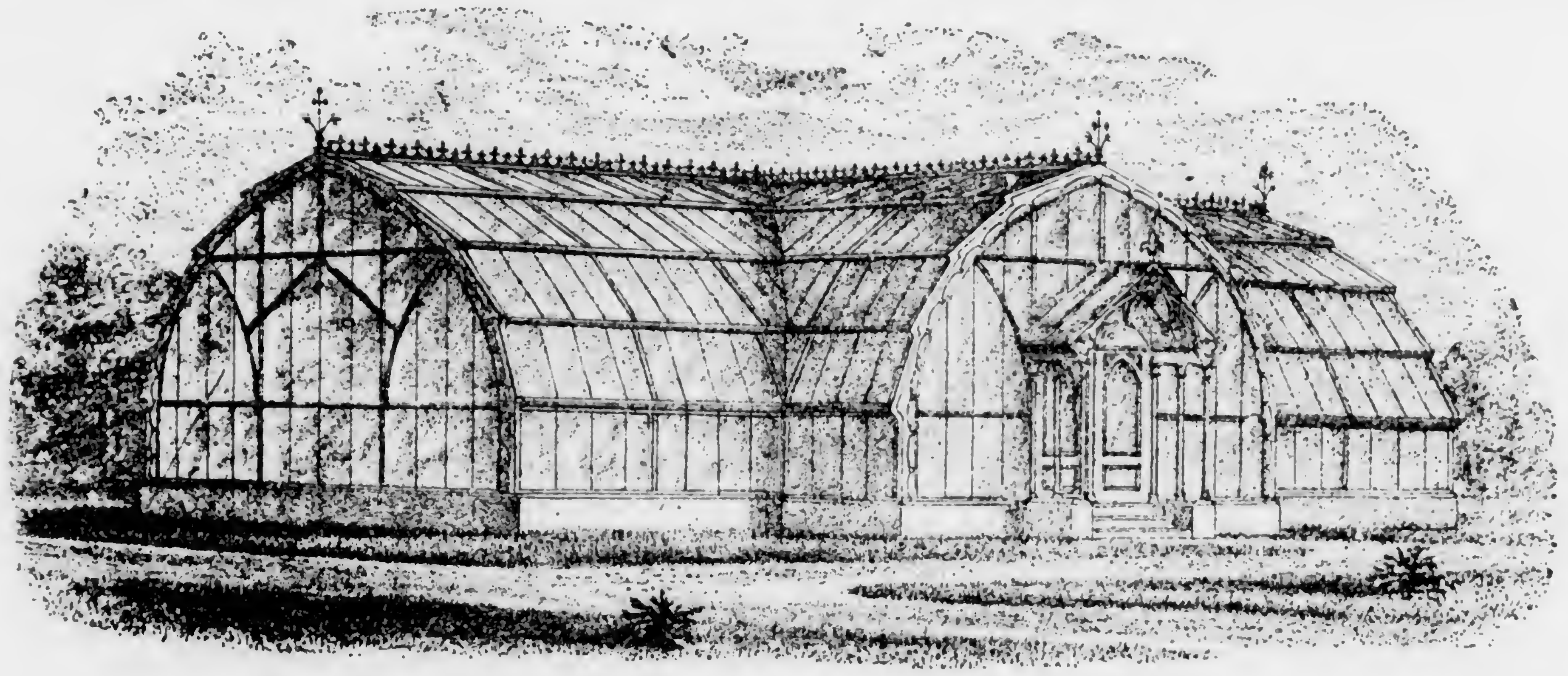
Boussingault.—The telegraph announces the death on the 11th of May of this celebrated student in vegetable chemistry, at an advanced age.

The Illustrated Strawberry Culturist.—By A. S. Fuller. New York: Orange Judd Co., The first edition of this work appeared 25 years ago, and has proved very acceptable to readers. This new edition brings the work down to the latest improvement, and thus has a new interest and value.

American Florist Company's Directory.—Directories for nurserymen, seedmen and florists, are getting to be numerous; all are useful, and this one specially so. It pays special attention to those engaged in the business as florists. We gather from it that Chicago has 102 persons engaged in raising or selling flowers. Of these 30 have stores in which they sell them, the others we suppose, sell direct from their greenhouses. Only six are classed as "growers," by which is possibly intended those who grow flowers on a large scale in order to chiefly wholesale them. Boston has 107 florists, 24 florists' stores, and 12 who are regarded as growers; New York, 176 florists, 111 stores, and not one grower; Philadelphia, 185 florists, 12 stores, and 11 growers; Baltimore has 48 florists, 8 stores, and no growers; Washington, D. C., 29 florists, no stores, and 5 growers; Cincinnati, 49 florists, 4 stores, 1 grower; Cleveland, 39 florists, 1 store, and no growers; Louisville, 29 florists, 3 stores, 7 growers; New Orleans, 48 florists, no flower stores, and no growers; San Francisco, 45 florists, 2 stores, 2 growers.

The Effects of the Severe Frosts on Vegetation During the Winters of 1879-80 and 1880-81. By Rev. George Henslow.—Journal of the Royal Horticultural Society, Vol. VIII., is wholly devoted to this subject. It comprises 338 pages; all reports from correspondents of the meteorological conditions all over Great Britain, with the full lists of the plants injured in the different localities. No attempt is made to deduce any general law from the immense array of facts gathered together here, and few, if any, will have time to work it out for themselves. In our country we have ceased to look on the thermometer as any guide whatever in deciding the hardiness of trees, or plants. In a low temperature with a dark cloudy moist time, a tree may have perfect immunity that would be "killed dead" by the same temperature in a low atmosphere and cloudless sky.

Japan Work on Botany.—Inouma Yokoussai appears to have been a famous author on botany in Japan. This particular work, we are told by Tanaka Yosiwo—who gives us here a second edition, issued in 1867—was for a long time the leading work on Botany by the amateur botanists of Japan. To the great regret of botanists, the sudden death of the learned Yokoussai, stopped a further edition of the work. This new edition gives the Latin names, the Japanese names, with the English pronunciations. We have but the first volume; but Mr. Tanako Yosiwo says there were to be twenty volumes devoted to herbaceous plants, six to trees, 6 completing volumes are given to grasses, sedges, and vascular Cryptogams, but after the publication of twenty volumes the illustrious man succumbed to age, and finished the manuscript without the plates, in six volumes. These six volumes are now (1867) to be published. The work is on the old sexual system of Linnæus; This volumes commences with Monandria, forty-two plates. It has a portrait of the author. We are indebted to Mr. A. Blanc, of Philadelphia, for this copy.



A Conservatory Glazed without Putty.

Horticultural Building Construction.—By Josephus Plenty, New York and Philadelphia. This is perhaps rather a catalogue for free distribution, than a book for review, and scarcely comes under the literary rule that demands notice in this column. But we are moved to do so because of the good work greenhouse builders, and Mr. Plenty in particular, are doing by aiding in the development of the taste for greenhouses in our country. Hitherto much of the work of planning these has been to architects, who have had no more idea that plants were to be grown in them, than if they were to hold pictures or statuary. Hence they have proved annoyances rather than pleasure to the proprietors, and a source of endless bickering and heart-burnings between employers and their gardeners—the latter too often believing that the gardener who could not grow plants in these buildings that cost so much, must be the parties in fault and not the architect. On the other hand, gentlemen who have been convinced that the architect is not the one to understand the requirements of the plant grower, have, in many instances, left the designing to the gardener, and while the result has been an excellent structure for the growth of plants, there has been too often a lack of architectural beauty, that would have given the building an additional charm.

It is then surely a great gain to horticulture when one who knows what plants require, undertakes to build houses, and who at the same time has the taste to give them beauty as well.

This book is full of pretty designs. We select one to illustrate the point made. We have beauty in proportion, and taste in finish, while the structure is perfectly adapted for its use as a conservatory, or rather, a cool greenhouse for large growing winter blooming plants.

It will also be noted that although the roof is curved the glass is straight, a point which is found in modern greenhouse building to have many advantages.

Perhaps much of the revival which seems to be taking place in greenhouse building, comes from the discovery that we can not only do without that intolerable nuisance, putty—but that matters are much simplified and made better without its use.

Mr. Plenty uses the Halliwell system of puttyless structures, which has been found excellent.

PUBLIC PARKS OF BOSTON.—The annual report of the Park Commissioners for 1886, shows that $123,981.88 were expended on construction and maintenance during that year. In order, however, to extend the Park system, the legislature has given authority to borrow $2,500,000, in order to establish more of them. $500,000 is to be borrowed at 4 per cent. each year, the bonds having 50 years to run. Mr. F. L. Olmsted is the consulting landscape gardener and Mr. W. L. Fischer is regularly engaged as assistant landscape gardener at a salary of $2,199.66 a year. Everything seems in a satisfactory and flourishing condition.

THE NEW SOUTH.—By M. B. Hillyard. Baltimore: published by the Manufacturers' Record Co. 1887. This is a description of the Southern States, noting each State separately, and giving their distinctive features and most salient characteristics, by Mr. M. B. Hillyard, who, probably, more than any other man, has labored since the disastrous rebellion, to develop the industrial resources of the Southern States. The Editor of this magazine, who was for sixteen years on the editorial staff of one of the leading daily papers of Philadelphia, is in a position to know how much is due to this excellent gentleman, who, abandoning promising opportunities for prosperous business in his native State of Delaware, in pure sympathy with the disasters of the South devoted his whole life to the work of building up the desolated region. His labors have benefited and will continue to benefit thousands, though it has not, we believe, been of any especial benefit to himself. Like so many other benefactors of the race, his work in behalf of progress may not be fully appreciated; but if the pleasure of living is to love, the Colonel—as he is called by all his friends and who is now engaged in pushing a railroad near New Orleans in order to develop a delightful region—will have had a full measure of happiness in his useful work. This work of 413 pages will long remain one of standard usefulness to those entering on industrial pursuits in the "New South."

THE UNIVERSAL TINKER AND AMATEUR'S ASSISTANT.—This is the title of a new $1 monthly magazine to be issued by Hodgson & Bertrand, New York. The gardener, of all other persons, delights to be a "jack of all trades," from the building of a greenhouse to the writing of a "practical treatise" on pansies or violets. Possibly he would get many good hits from a magazine like this.

INSECTS INJURIOUS TO THE TREES OF WASHINGTON.—By C. V. Riley. Bulletin No. 10 of the Entomological Division of the United States Department of Agriculture.

In Washington, as elsewhere, Prof. Riley finds there are four serious pests to the shade trees—one, the Elm-leaf Beetle, that skeletonizes the leaves of the Elm; the Bag-worm that eats everything, but especially Arbor Vitæs and conifers generally; the Tussock moth which is equally omnivorous, and the fall Web-worm. Fortunately the Tussock moth is the worst to handle. With the information gathered by Prof. Riley about these things, destruction is within the scope of probability, and not so difficult to bring about.

The combination of the accurately scientific, with that which is practicable and reasonable is a rare trait in the character of one at the head of affairs. Few men have it in the degree possessed by Prof. Riley, and we never take up a work issued by the Government from his pen without feeling that our Government was fortunate in securing his services. The work can be had on application to the Department at Washington, as well as a report on the experiments made with various insecticides. Cold water for cabbage proves useless, as does salt water. Pyrethrum powder is the best for this enemy.

CATALOGUES.—Beyer Hugo, Garden and Flower Seeds, New London, Iowa; Lambert & Reiter, New Roses for 1887, Trieste, Germany; Miller, G. H. & Sons, Fruit and Ornamental Trees, Vines, Shrubs, Roses, etc., Rome Ga.; Plenty, Jos., Horticultural Building and Construction, New York City; Societe Anonyme L'Horticulture Internationale, New Plants and Orchids, Brussels, Belgium; Van Waveren & Kruyff, Dutch Bulbs, Sassenheim, near Haarlem, Holland; Van Waveren, L., & Co., Dutch Bulbs, Hillegom, near Haarlem, Holland; Webster, T., Special Trade Bulb Lists, Hyde Park, Mass.

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

FLOWER MARKETS AND THE PENNSYLVANIA HORTICULTURAL SOCIETY.

BY J. E. M.

One of the first objects of interest to the traveler, in Paris, is the Flower Market, which is held in different quarters of Paris. Some days in front of the Church of the Madeline, and on other days at various quarters in Paris.

The pots are arranged on the street, and are wrapped in white paper which forms a background to the flowers. Thirty years ago there were from 15,000 to 20,000 plants sold daily and above 50,000 on fete days; these and beautiful bouquets of violets are sold by the pretty flower girls at very low prices. There is no city in this country nor in Europe, except Paris, where, the materials are at hand for establishing a flower market equal to our own. The various side-walk collections now to be seen, would, if gathered together, make a point of attraction for our people and visitors, and increase the sales of the florists. On May 18th, 1841, the Pennsylvania Horticultural Society appointed a committee, with Mr. Caleb Cope, Chairman, to apply to our City Councils to have established a flower market, which was granted by the following ordinance, which has never been repealed:

AN ORDINANCE.

appointing a stand for the sale of plants and flowers.

Section 1. Be it ordained and enacted by the Citizens of Philadelphia in Select and Common Councils assembled: That the Committee on City Property be, and they are hereby authorized to grant permission to persons to exhibit and expose for sale, plants and flowers, on the sidewalk on the South side of Walnut Street between Sixth and Washington Streets, under such restrictions as the said Committee may, from time to time, impose, or the Councils ordain, for the preservation of order, and the prevention of inconvenience of passengers, and security of the rights of the Citizens.

JOS. R. CHANDLER, Chairman.
H. J. WILLIAMS.
GEO. SHARSWOOD.
WILLIAM MORRIS.
SAMUEL BECK.
SAMUEL W. WEER.
JOSEPH HAND.
REESE D. FELL.
Committee on City Property.

Philadelphia, June 3, 1841.

(Copied from Ordinance of City of Philadelphia, in library of Franklin Institute.)

The importance of this movement was urged upon our gardeners at that time and frequently afterwards, but as little or no interest was manifested, the project was dropped and has remained a dead letter ever since; but as considerable interest is now being manifested in this matter, there is no reason why a flower market should not be established at once under the auspices of the Pennsylvania Horticultural Society, with the assistance of the young and energetic Florists' Club.

[We give this as embodying the views of the esteemed President of the Pennsylvania Horticultural Society, though for our own part when public market houses are common in every part of the city, we have some doubt about the wisdom of giving the public streets for any purpose whatever. Would there be any profit in an exclusively floral market-house in a central location?—Ed. G. M.]

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EDITORIAL NOTES.

PENNSYLVANIA HORTICULTURAL SOCIETY—SPRING EXHIBITION.—Those who have been of late lamenting, that flowering plants have been banished from exhibitions, and nothing but ferns and leaf plants are to be seen in their places, dried their eyes and looked happy at the beautiful display made at the spring exhibition of the Pennsylvania Horticultural Society. The huge hall was one mass of flowers. There was much that was wholly new, while, as specimens of good culture, some of the exhibits would have done no discredit to the happy days of yore, the grey heads love to talk about.

Among the matters that may interest our distant readers we may note that Mr. H. A. Dreer demonstrated that the days of named Anemones are numbered. He had seedlings, but a year old, with every imaginable shade of color among them. It was indeed new to our reporter, that so much beauty and variety could be had in a single season from a small paper of Anemone seed. The old-fashioned Primroses, had beautiful displays by several exhibitors. We noted that some varieties had much more of the fascinating primrose scent than others. Polyanthuses are primroses with more than one flower on the common peduncle. But often both forms may be seen on the same plant. Those exhibited by Mr. W. K. Harris, which had the first premium, were grown in 8-inch pots, were chiefly Polyanthuses, and had about 12 strong trusses of flowers to each plant. Mr. H. had also a nice display of the favorite old English daisies. The collections of primroses from Mr. Shaw, gardener to Mr. Clarence Clark, and of Mr. Sykes, gardener to Mrs. Harry Ingersoll, were not far behind the premium set. Hydrangeas are getting popular for pot growing. They make exquisite plants for ornamenting rooms. Mr. August Lutz had some beauties. They were in 8-inch pots and had about 8 large heads to each plant. Amaryllises are growing also in popularity, and pretty things they are. Mr. Harris had a large number of the varieties of the vittata class in beautiful bloom.

For collections of ornamental plants in pots it was pleasant to note that the taste of the judges is getting back to favor healthy, well-grown plants, rather than monstrous things in tubs, which only elephants can drag comfortably around.

The first premium was given to David Emery, gardener to Mrs. Dissel. It was one of the most meritorious, from a cultivator's point of view, ever seen in the Hall. Few were in over 12-inch pots. The same excellent grower had a collection of Cinerarias. They were about 2 feet high, and had that exact proportion between flowers and leaves which the good cultivator aims at. With too much manure, the mass of leaves is often disproportionate. Rhododendrons and Azaleas made a grand display in the Hall. These were also from the gardens of Mr. Clarence H. Clark, and were fine specimens of growth. One called Limbatum was charming. The flowers were pure white, but with a very narrow edging of dark rose. It is evidently of the Ponticum breed, and therefore not hardy, but just the thing for pot culture. The Azaleas were about 6 feet high by 5 feet wide, perfect cones, showing no evidence of art in training, and therefore more pleasing by the naturalness of their character. One of the plants was of the old Purpurea variety, which, in a specimen like this was quite as effective as many of the rarer kinds would be. The Hyacinths from the collection of Mr. Geo. W. Childs, were much more perfect specimens than those which obtained the medals a month ago. There was no undue proportion between leaf and flower spike, and the plants were uniform in size and appearance. Mr. Hughes, Mr. Childs' gardener, received great praise from the best gardeners for this handsome exhibit. The same good gardener, had a grand specimen of that good old yellow late winter blooming plant, Cytissus or Genista racemosus. It was about 8 feet high by 6 feet wide. Mr. Davis, gardener to Mr. W. P. Henszey, has some nice specimens of Lilium Harrisii in 10-inch pots, with about seven flowers on each stalk. In pots Mr. Banyard had a large number of plants of his new Carnations, "Quaker City," a white one, and "Robert Craig," crimson. They appeared to be wonderfully floriferous, but are probably not early bloomers. Messrs Craig had a beautiful arrangement of plants suited to decorative purposes, in which the chief point of attraction was the good use made of Asparagus tenuissimus, which was made to do duty in festooning the table containing its companions.

The old Calceolarias which had so much to do with ornamenting our spring greenhouses a quarter century ago, is being revived again. Mr. Gebhard Huster, had a nice collection, and it was hoped that he would continue to give us these good things again every year. It is a strange fact that there were good gardeners there, to whom these Calceolarias was an unknown plant.

A new class of Begonias, with beautiful bronzy peltate leaves, was brought into notice by Mr. Murtz, gardener to Edmund Smith, Esq. The original species is Begonia gogoensis. Orchids were not as numerous as usual. Among others, a Cattleya purpurata in the collection of Mr. Joyce, gardener to Mrs. Baldwin, though with but two spikes, and three flowers on each spike, was very much admired.

The cut flower specimens, were much as noted in our last, though we do not remember Meteor among the Roses. This appeared to be a Bourbon, and as dark as Gloire des Rosamene, but flowers very double. It was from Mr. C. T. Evans.

MARYLAND HORTICULTURAL SOCIETY.—While friends in Boston, New York and elsewhere, kindly keep us posted, if only by local newspaper slips, of the work of their horticultural societies, we rarely get such favors from Baltimore, and are therefore the more under obligation to the kindness which prompted the sending of the following note:

The Maryland Horticultural Society still continues very prosperous, and its April show was

a very good one indeed. Among the successful exhibitors were T. H. Garrett, James Pentland, Mrs. Delahay, G. A. Black, Herman & Brother, Alex. Scott, E. Hoen, Hamilton Easter, R. J. Halliday, John Cook, John Wildey, Robert Graham, Mrs. Hamilton, and Mrs. Nolen. Mr. Pentland keeps up his love for Camellias and made an admirable display. The premiums were given for the best Azaleas and Rhododendrons, Geraniums, Lycopodiums, Ferns, Calceolarias, Cinerarias, Bedding Plants, Roses, Orchids, Tulips, Pansies, Succulent Plants, Hanging Baskets, Fuchsias and the usual assortment of cut flower work. Among these a very useful design was by Herman & Brother, which gave a model carpet garden, by which hints for the arrangement of proper colors were afforded.

Among the special matters of general admiration was a plant of Puya Altensteinii, one of those brilliant things of which the pine-apple family contains so many. This was from Mr. Robert Graham, from Patterson Park. Possibly the most attractive thing were the orchids from Mr. T. Harrison Garrett's, whose gardener, Mr. Donald S. Grant, is a rare lover of gardening, and who does much to keep up the interest in the exhibits. He carried off about a dozen of the premiums.

HARTFORD COUNTY (CONN.) HORTICULTURAL SOCIETY.—A renewed interest in horticulture has led to an effort to renew the Horticultural Society which formerly existed. A recent meeting was held in the Mayor's office, with J. G. Webster as Chairman, and Clarence Bryant as Secretary. Excellent addresses were made by Dr. G. W. Russell, J. G. Hale, F. S. Brown and Wm. May. A constitution and by-laws were adopted, and every sign of vigorous usefulness ushered in the new endeavor.

GERMANTOWN, PHILADELPHIA, HORTICULTURAL SOCIETY.—The May Meeting generally makes a specialty of wild flowers. On this occasion Mr. Edward Gellet exhibited 120 species all collected by him in the vicinity of Germantown. These were all named, and it shows what a prolific locality it must be when so many native flowers can be found in bloom at one time. Mr. Gellet is a young artisan, and is employed all day at his trade. He believes if he had the time at his disposal he could have found double the number. Messrs. Joseph Meehan and George Redles had also collections, the items of course being much as in the first premium set.

Among the rare things exhibited was a plant of a Taxocarpus, a white flowered plant allied to Rogiera, which filled the atmosphere of the hall with its delightful perfume. It was from Mr. Daniel Curtin a well known florist.

THE ROYAL HORTICULTURAL SOCIETY.—This society held a provincial show at Liverpool recently. The loss was $8,300.

A CALIFORNIAN FLORAL FETE.—California must indeed be a land of flowers, judging by the festival that, extending over two weeks, has excited the famous old town of Los Angeles. Hundreds of contributors of cut flowers, poured them in from all parts of the country. Designs, as they are called, of cut flowers, furnished fresh novelties every day. The "unveiling of a floral ship" was the great work of the first day.

The sum of $969.60, taken in that day, shows how popular the floral ship must have been, though the prayer of Reverend Joseph Pendleton, or the address of his Honor the Mayor, may have divided the attractions of the day with the ship.

On the second day, a great attraction was the American flag—the red being of Zonale Pelargoniums, the white of Pyrethrum, and the blue of Heliotrope. A grand cross which had been used the day before in Episcopal services, was exhibited. The golden colors, made of yellow Marigolds. A huge shield made of Marigolds, Roses, Geraniums and Stock Gillies, was sent by Mrs. Crocker as a contribution from the Citrus Valley. A huge fan, the rays fifteen feet long, was a "design" highly applauded. A huge snow-shoe, made of White Pyrethrum and Geraniums, divided the applause with it, bringing cooling memories into a warm day. The floral ship was 13 feet long, and bore a cargo of oranges. The grand design, however, was the famous shoe of Mother Goose, in which her huge family of children were all represented—as large as life. Geraniums made the shoe, except Marigolds were at the heel, and a binding of Smilax fringed the orifice. Cut flowers were sold, ice cream, lemonade and everything useful in such a gathering, everything having a booth to itself, and the materials sold with the attendants being almost smothered in flowers. These attendants—young ladies—are described as being truly lovely, though when a reporter suggested this to one of the young ladies, she replied to him "now don't be soft.' She was after his cash just then instead of his compliments. It was an example of misplaced confidence at that time.

Roses seem to be the favorite flower as well as elsewhere. A branch of the Washington Noisette, had 13 flowers full blown and 57 unexpanded buds. Mrs. Heaver exhibited 100 named varieties in cut flowers. Mrs. Fox sent a flower of Paul Neyron that measured 18 inches round. The "shoe design" was 6 feet long and 3 feet high. The public school children sent a huge painter's easel, with geometrical ferns arranged in flowers. The triangle was made of Lilies.

The Public School Booth however gave diversions for the designs, in literary exercises in the form of criticisms on poetry. The illustrations were however given in floral designs. Some connected with the Merchant of Venice were quite taking. The door money taken in during the first four days was $3053.80.

The proceeds all go to charitable purposes.

THE GARDENS AT THE AMERICAN EXHIBITION IN LONDON.—Recently I paid a visit to the works in progress at Earl's Court, upon which over a thousand men are employed, when a glance at the main exhibition building now in progress, and the surrounding grounds, which cover 23 acres, sufficed to show what a great undertaking our "American cousins" are about to attempt here.

The gardens and promenades surrounding the buildings occupy about 9 acres, and are divided into two sections—the western and the central. This large extent of ground is beset with great difficulties, which must be overcome before what was market gardens and waste ground can be transformed into a pleasing promenade and gardens for the visitors to the Exhibition.

One of the most prominent features at the present moment, and the only one that shows an approach toward completion, is some rockwork artistically arranged, and which harmonizes with the gentle undulations of the surface in that part near the West Kensington station. This spot will probably be one of the most attractive in the whole garden. Here will be arranged some of the choicest hardy flowers, especially Lilies, Orchises, etc., of North America; and the beds are so designed as to suit the various requirements of the plants. A portion of this section has already been taken in hand, and planted by Mr. T. Ware. There are "colonies" of such interesting plants as Cypripedium spectabile, Sarracenias, Dodecatheons, Trilliums and many other well known beautiful perennial plants. The crevices of the rocks are planted with North American ferns and Saxifrages.

The garden throughout will be studded with groups representing the American flora, giving it a distinctive feature; indeed, no other plants but those inhabiting North America and Mexico will find a place. It is the aim of Mr. Goldring, the landscape gardener, to so "group" the plants that when in flower each "group" shall have a characteristic effect. For instance, in one part he will have all the varieties of Evening Primrose (Œnotheras) in one large group, the prevailing color of which is yellow, interspersed with white; further on all the Phloxes, and these will be very ornamental, as it is intended to include the showy varieties which have originated from the North American species. Close to these will stand groups of the best species of Michaelmas daisies (Asters), and these will carry on the floral display until the close of the Exhibition. A glow of color will be produced by thousands of Tigridia, scarlet, yellow and white, and these will be associated with other flowers of kindred tints.

The Composites will, of course, predominate, as they comprise such a large portion of the flora of the States; the garden will therefore be most attractive during the latter part of the summer.

Other important classes of plants are the herbaceous Spiræas, showy Gaillardias, and Helianthuses; scarlet Lobelias of California, annual and perennial Lupines, alpine Phloxes, and Iceland Poppies; while under such trees as exist, chiefly pears and elders, are shady spots for the larger-growing ferns.

The temptation to introduce Dahlias appears to have been too great to resist. Mr. Goldring wishes likewise to introduce such singular-looking Cactaceous plants and Agaves of Mexico as are likely to prove interesting to the visitor, and add considerably to the picturesqueness of the whole.

The "central garden" will be enlivened by Californian annuals, which Messrs. James Carter & Co., High Holborn, have undertaken to furnish, and the same firm will also sow the lawns. As yet little has been done in the way of tree or shrub planting, but the ground is being prepared in all haste for the purpose. A large area is being set apart for a Rhododendron display on ground furnished with undulating slopes, and which will be wholly covered at the flowering period with canvas. Plots are to be set apart for tobacco, maize, hemp, and other plants connected with the chief industries of the United States. The main building and its surroundining garden are quite apart from the eastern section—an area of 6 acres—connected with the main building by a wide corridor of about 100 yards in length.—*Gardeners' Chronicle.*

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

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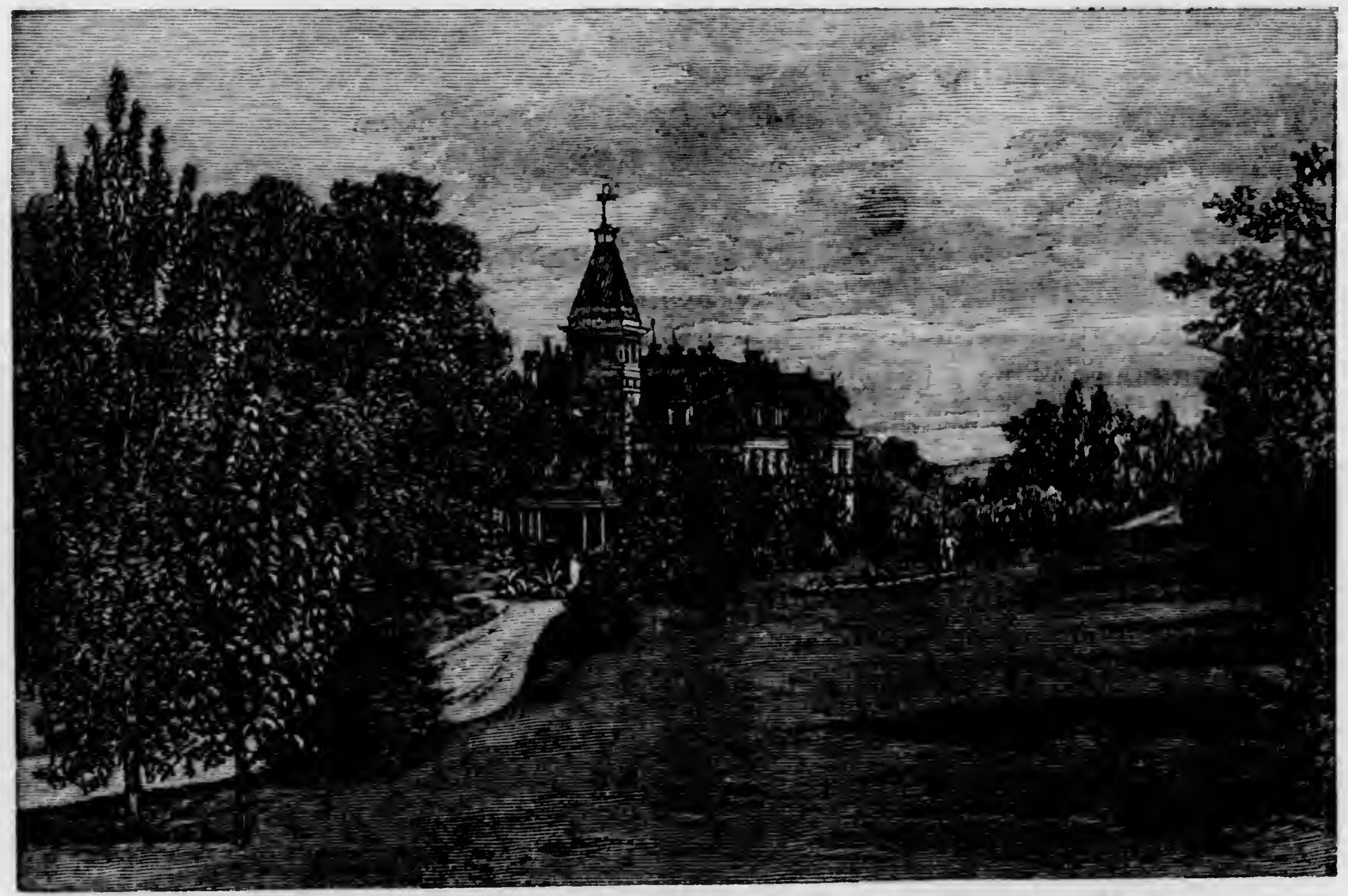
FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Continuing our hints on tasteful landscape gardening, we give this month some views of Glenview, the residence of John B. Trevor, Esq., of Yonkers, in order to illustrate a point made last month, that architects seldom take into consideration how much the architecture itself is affected by its position. A house may look pretty enough when examined in the specimen book at the architect's office, and yet when erected impress one very unfavorably by reason of the surroundings. To use an expressive phrase, it is out of harmony. As stated in the chapter already referred


Glenview: The Residence of John B. Trevor, Yonkers, N. Y.

to, a tall turreted or castellated building looks best on an eminence—while a low broad building shows to best advantage on a low broad plateau Mr. Trevor's residence looks admirable on the elevation as presented—but would be wholly out of character on a level plain. The gardening proper of this beautiful place is on the other side of the house, and of which the smaller picture gives a glimpse—we see just enough to understand that the little ornamentation the larger view presents, gives the stronger pleasure to the garden proper when we reach it. It is these contrasts and harmonies that go to make up much of the great pleasures of good landscape gardening.

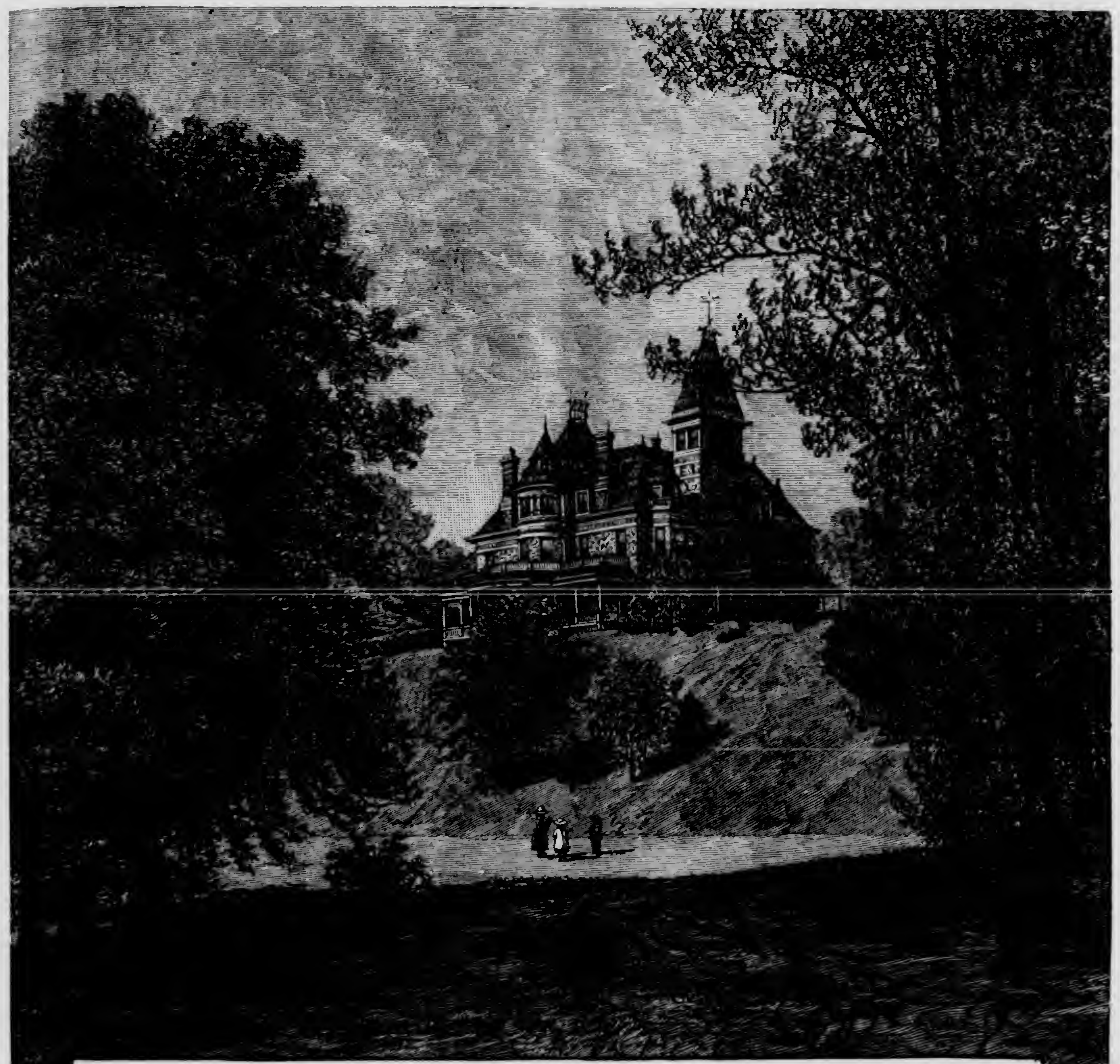
Increased attention has been given the Rhododendron and Azalea the few past seasons, as they prove to be much more easy to manage than people formerly thought. It is found to be a mistake that they need shade. It is only a cool soil they require. This is made by deepening it, and adding to it material, which will keep it open and porous at all seasons. We accomplish this by adding fine brushwood with the heavy clay loam. Those who have them in good growing order should take care to keep them in good health by occasional top-dressing. This they enjoy, as the little hair-like roots fancy feeding in cool places, near the surface. It has been found in the vicinity of Philadelphia that well-decayed cow manure is used to very great advantage as a dressing for these plants. There is considerable difference in the hardiness of some of the varieties. The original species that gave birth to this race of beautiful kinds, is the Rhododendron Catawbiense of the mountains of North Carolina, a very hardy species, and the Rhododendron Ponticum, from Asia Minor, which is tender. Just in proportion as the constitution of each parent predominates is the relative hardiness of the offspring. The same kind that would be hardy in the old world with its moist atmosphere, may be tender in our clear dry climate. Great care therefore is required in the selection of varieties, to get those in which the R. Catawbiense preponderates. The Rhododendron maximum—the Mountain Laurel of some of our people, though the Wood Laurel, Kalmia latifolia, sometimes gets the name—does not seem to have entered much into the hybridism of this beautiful tribe. It flowers later, and this may be one reason. It cannot be that "hybrids are sterile" for Rhododendron hybrids, as well as most other hybrids are as fertile as can be. The Rhododendron maximum however is well worthy the attention of American planters.

Summer pruning is very advantageous on trees and shrubs, and it is surprising that it is not more practiced. A judicious thinning out while the tree or shrub is growing, would save much work in the winter season, when it is too often the custom to get the cowboy with a shears or a laborer with an axe or saw to crop off the head, and irretrievably ruin things. The finger and thumb on the young branches of pines while they are growing, have a wonderful effect on the beauty of the tree. Evergreen trees love pruning as well as deciduous. The Scotch pine and the Chinese Arbor Vitæ, are two plants which derive wonderful benefit from the pruning knife. Both these are very liable to get ragged when left entirely to their natural inclinations, but grow with a beautiful compact luxuriance under the occasional application of the knife. Indeed the Scotch pine with judicious pruning makes one of the most beautiful ornaments of the lawn and pleasure ground. It can be made to take many odd forms; one of the most picturesque is obtained by cutting off its head when about ten feet high, and never let another leader grow. The side branches are all cut away except the upper tier, these spread then outwardly—not exactly creeping but flowing forward in the most luxurious green imaginable, making a much prettier arbor than any weeping tree we ever saw.

These peculiar objects are very striking in a flower garden, and other things besides evergreens will furnish them. Deciduous shrubs may often be trained into interesting forms. The Wistaria sinensis, for instance, makes a very interesting object trained as a small tree. If tied up to a stake for one or two years, and then suffered to stand alone, it will make a pretty round head, and when in spring the pendant blossoms are in profusion, it makes a unique ornament on a lawn.

So many roses have been sent out on the Manetti stock, that great care will be needed to watch for and take off the suckers as they appear, or in a year or two they will kill the grafted part; one can soon educate the eye to distinguish between a Manetti and the kind grafted on it.

Hybrid perpetual roses are classed among the ever-blooming ones, but whether they bloom freely in autumn or not, depends much on treatment. The flowers at this season should be cut off at once as they fade. It is from the new buds which push from under the old flowers that comes the autumn blooms. All roses bloom the better in their succession for having their flowers cut as they fade.



Side Terrace at Glenview.

A very interesting occupation is the raising of roses from seed. General Jacqueminot seeds freely, and makes a good parent. A few blooms may be left to mature on this variety.

Towards the end of June propagation by budding commences. This is very commonly employed with the rose; but ornamental trees and shrubs may be increased in the same way. Closely allied species must be chosen to work together.

Propagation by layering may be performed any time when strong, vigorous growing shoots can be had. Any plant can be propagated by layers. Many can be readily propagated no other way. Cut a notch on the upper side of the shoot, not below, as all the books recommend, and bend down into, and cover with rich soil. In a few weeks they root, and can be removed from their parents. Stakes for plants should be charred at the ends before using, when they will last for years.

The rose bugs are apt to be very annoying at some seasons. The best remedy is to shake them off into a pail of water. The rose slug is often very injurious to the leaves—completely skeletonizing them. All kinds of rapid remedies have been proposed—whale oil, soap, petroleum, etc., but the best thing of all is to set a boy to crush them by finger and thumb. It is astonishing how rapidly they are destroyed by this process. This is true of most of the larger insects. Hand picking or crushing is by far the best remedy.

Peg down roses where a heavy mass of flowers is desired. The side shoots push more freely for this treatment. Roses may be propagated by layering as well as other plants.

COMMUNICATIONS.

ROSE, AMERICAN BEAUTY.

BY DR. LUDWIG FRITSCH.

We learn by Fr. Harms, of Hamburg, in the latest number of *Möller's Gardeners' Zeitung*, Erfurt, Germany, that this is an old French rose. The florists of our country should, as soon as possible, take notice of this fact. How did this rose come into the trade, and by whom under this wrong name?

If it was no swindle, but a mistake from ignorance, we should correct it as soon as possible.

Its real name is Madame Ferdinand Jamain, and was raised by Lédéchaux, 1875. Mr. Fr. Harms in Hamburg states that he propagated this rose a short time after its appearance *en masse*, but could not find any market for it on account of its cherry red color which found no admirers in that time. When this old maiden was made young again like many others (La Reine, Beauty of Glazenwood, Celine Forestier, etc.,) and our Yankee Garden Barnums praised it to the world, the best rose connoisseur, Fr. Harms, was taken in by our Yanks and they sold him 200 plants. But, seeing it flower, the *true gardener* found out the fraud, and he advertises stock and propagation at no price in Germany at this time.

So much for our honest propagators and dealers.

Evansville, Ind.

GARDEN NOTES.

BY W. FALCONER.

Abelia rupestris, p. 323, 1886.—Although this pretty little Chinese evergreen shrub is hardy in Texas, it is not hardy around New York, but it survives our winters very well in a cold frame. With me it blooms from late summer on through autumn and winter, and the color of its flowers is from nearly white to pale rose, but its foliaceous segments are usually more deeply tinted than is the corolla. The Mexican species, A. floribunda, has larger and showier but fewer flowers and they are of a purplish-red color. But this little abelia is only one among many choice shrubs; for instance, tea plant, pittosporum, Magnolia fuscata, and three-leaved berberis, that the good people of that lovely country, between the Brazos and Colorado, enjoy as common garden shrubs and which we have to grow as greenhouse and pit plants, in winter at least.

Ægopodium Podograria, fol. var., p. 323.—A good enough plant in its way, and the variegation of its foliage is decided, conspicuous and permanent; but Mr. Burgevin, don't you find it to be an inveterate weed? It has always behaved so with me.

Lespedeza bicolor, p. 327.—Has a fixed shrubby nature and blooms in July. The plant generally known as Desmodium penduliflorum is as you say a "half shrubby, herbaceous plant" with us, and in good ground forms immense clumps 5 to 7 feet high in a season. But it does not come into bloom till the end of August. The white-blooming variety is a capital companion to the typical purple-flowered sort.

Moles, p. 327.—J. N. B., says he has not been successful with the Isbell mole trap. Our place once was, and if opportunity granted would still be, very badly overrun with moles, but with the help of an Isbell and a Hale's trap I keep the moles under complete control. I gave these traps to one of the workmen and now hold him responsible for any appearance of moles on the place. These two traps are simple and efficient, and if used intelligently and persistently will keep the moles in check.

Stapelia Hardy in Texas, p. 328.—As outdoor plants in summer, and in the full sunshine, Stapelias grow and spread with a luxuriance they never attain as pot grown plants. For a good many years I have grown them in this way, that is, planted them out in summer, lifted and potted them in fall, and wintered them in a greenhouse. But I always found that the first sharp frost killed the surplus pieces or plants that I left out-of-doors. And I am the more surprised at the immunity of Mrs. H's Stapelias, as I know that in winter they have some pretty cold snaps, a good few degrees of frost, at Palestine. In protected places and with some covering I dare say the little Africans can shiver through it. Will Mrs. H. kindly give us some particulars?

Cercidiphyllum Japonicum, p. 338.—As an ornamental tree it is distinct and pretty and worthy of cultivation. It is hardy, a ready grower, and easily transplanted. It does not assume, with us at any rate, nearly so fastigiate a form as the Lombardy poplar. Although it is a free-grower, from its manner of growth I am not inclined to

expect for it a future as one of our timber trees It is rather impatient of drouth.

Trees for the Seaside, p. 338.—Please don't omit the Silver Thorn (Eleagnus hortensis).

Uvularia perfoliata, p. 342.—As a garden plant it spreads too much and is not good-looking enough for the choice border, but naturalized in shady places, also in wild or rock-gardens, it often finds a place. U. grandiflora and U. flava, grow more in tufts and are more showy. They are not uncommon as garden plants.

Wild Plants.—While some of our little wood and mountain flowers are the dearest and sweetest of floral gems, for instance the Linnea, Fringed Polygala, Creeping Azalea, Cassiope, Cushion Pink, Glaucous Kalmia and the like, they are very difficult to establish in our gardens, and more especially to get them in bulk enough to make any show. But Wild Callas, Trilliums, Aralias, Sarracenias, Soloman's Seal, Cypripediums, and the like make capital garden plants.

Soil for Mountain Plants.—The best material I ever used was rotted leaf-soil, such as I made at home or raked up from the hollows in the woods; also the thin lining of leaf mould to be found in the hollows in rich woods and which I skinned off with a sharp spade. This mixed and chopped up together, and a little sharp sand added, forms a soil in which most wild plants will establish themselves. And after planting I mulched the ground with sphagnum moss, then let it alone.

A Garden of Gems.—The loveliest little garden plot I ever set a foot in, natural or artificial, is around the Lakes of the Clouds between Mount Washington and Mount Monroe. There, above tree limits, all the little alpine jewels seem to congregate.

Glen Cove, Long Island, N. Y.

ZINNIA ELEGANS ROBUSTA GRANDIFLORA PLENISSIMA (LORENZ).

BY CHARLES LORENZ.

My continued endeavors in improving the most popular flowers have enabled me, in course of time, to introduce flowers of greatest merit, such as Pansy Emperor William, Diadem Pink, Gamphrena globosa nana compacta, Gaillardia picta Lorenziana, Dianthus, Mourning Cloak and others, and are now crowned with a new, highly considerable success. By the most careful endeavors of many years, I have succeeded in raising a new large flowering double Zinnia of the highest possible perfection, which I shall give in the trade this year.

It is not only the most considerable novelty of this year, but it has also, in contrast with the great many novelties of often most dubious merit, introduced by the novelties fever of the last years, the peculiarity that its real value cannot be sufficiently described. Every man must see the plant itself to be able to appreciate the great value of the same.

Even the plant differs entirely from the old variety by its luxurious, robust growth, and the deep green color of the large leaves. It forms a handsome Dahlia-like bush, of 3 feet and more in height, and above the same are elevated on strong, slender stems, the enormous flowers from 5 to 6 inches across, which appear in uninterrupted succession, and represent in all respects the highest possible perfection. Whilst the flower-leaves of the old double Zinnia lie tile-like, one on another, giving thus to the flower a more flat appearance, the nearly twofold-sized flower-leaves of this new variety are vaulted, and as they are produced in such a great abundance that they often cannot find place enough for development, the flower gets such an elevated face that its appearance is quite another one to that of the old flower. Corresponding to the more robust growth of plant and flower, the colors of the last are more beautiful and intense, partially being really dazzling, and also the richness of shades is a promising one, as tinges appear which are not yet found amongst the old double Zinnias. The magnificent flowers preserve their full beauty during three or four weeks even in the greatest hotness.

By the luxurious growth, and the large bright flowers, this novelty is particularly valuable for large groups, but it will be also of great effect when planted singly or as a border plant in small gardens, and will undoubtedly soon become a general favorite.

The engraving I saw represents a flower of medium-size. I had shown a collection of medium-sized flowers at a meeting of the Erfurt Horticultural Society, where they caused a great sensation, and were generally admired. I believe it is not saying too much, that by careful endeavors of many years, I have raised the ne plus ultra of double Zinnias.

John Street 100-103, Erfurt, Germany.

EDITORIAL NOTES.

THE LABURNUM.—This tree was scarcely ever more beautiful than this year. The golden racemes seemed longer and the flowers of a brighter yellow than usual. It will sometimes reach the height of twenty feet. It often has the common name of "Golden Chain," though Laburnum is quite as common.

Mahonias.—Rarely have Mahonias been more beautiful than this year. The brilliant yellow blossoms, with the dark green holly-like leaves, renders them particularly attractive. They like to be planted in situations where they do not get the full sun in winter.

Sweet Scented Roses.—Having ascertained that I had sixteen varieties of scentless roses in my garden I made out a list of these, and at the same time, another list of the most popular kinds grown which did really possess the fragrance so much sought after in the queen of flowers. This list—in which the first thirty mentioned are those which, in my opinion, are superior in this respect—may be useful for the guidance of persons intending to improve or enlarge their collections. I have said nothing about the Moss, Provence, Gallica, or Tea-scented varieties, which are all more or less highly perfumed. Amongst the Tea-scented kinds, Maréchal Niel is decidedly the sweetest and most powerfully scented of all. My list embraces Hybrid Perpetuals only.

La France
Alfred Colomb
Monsieur Woolfield
Bessie Johnson
Madame Therese Levet
Duchess of Edinburgh
Senateur Vaisse
Pierre Notting
Exposition de Brie
Duke of Wellington
Le Rhome
Madame Moreau
Jules Margottin
Mdlle. Marie Rady
Miss Laing
Marie Baumann
Senateur Favre
Louise Van Houtte
Souvenir de Julie Gonod
Baroness Louise Uxkull
Alexander Dickson
Duke of Edinburgh
Maurice Bernardin
Velours Pourpre
Madame Victor Verdier
Leopold Hausburg
Mdlle. Julie Pereard
Duc de Rohan
Princess M. of Cambridge
Madame Knorr

The above thirty varieties may be depended on as being amongst the most highly perfumed Hybrid Perpetual Roses in cultivation; the following are, however, little inferior:

Madame de St. Pulgent
Souvenir de Spa
Prince Humbert
Madame Auguste Verdier
Fisher Holmes
Charles Lefebvre
Jean Cherpin (Bennett)
Cheshunt Hybrid
Lord Clyde
Madame Marie Finger
Xavier Olibo
Leopold Premier
Baronne Haussmann
Madame Clotilde Roland
Claude Levet
Anna Alexieff
Marguerite St. Amand
Madame Boll
Madame Rousset
Madame George Paul
Souvenir du General Douai
Edward Morren
Duchesse d' Orleans
Vicomte Vigier
Abbe Girandier
Ferdinand de Lesseps
Annie Wood
Madame Chas. Wood
Emilie Hausburg
Camille Bernardin
Captain Christy
Madame Derreux Douville
Duchesse de Caylus
Dupuy Jamin
Gabriel de Peyronny
Mdlle. Marguerite Dombrain
Felix Genero
Alpaide de Rotalier
Semiramis
Prince Camille de Rohan
Gloire de Santenay
Adolphe Brogniart
Eli Morel
Beauty of Waltham

—*The Garden.*

The Best Hybrid Perpetual Roses Raised During the Years Named.—The following, I think, will be generally admitted to be the "cream" of the large number sent out during the period referred to, viz:

1879.	Raisers' names.
Charles Darwin	Laxton.
Countess of Rosebery	Postans.
Duchess of Bedford	Postans.
Harrison Weir	Turner.
Dr. Sewell	Turner.
Catherine Soupert	La Charme.
1880.	
Dr. Hogg	Paul & Son.
Duke of Teck	Paul & Son.
Julius Finger	La Charme.
Gloire de Bourg la Reine	La Charme.
1881.	
Mrs. Jowitt	Cranston & Co.
Pride of Waltham	W. Paul & Son.
Lady Sheffield	W. Paul & Son.

As regards the roses sent out in 1882, and not yet really proved, perhaps the following will be found good, viz:

Violette Bouzer	La Charme.
Ulrich Brunner	Levet.
Helen Paul	La Charme.

—*William Walters, in Gardening Illustrated.*

Late Season in France.—As in this part of the world, the season was late in France. In Paris, where the lilacs are wholly in bloom on the 15th of April, they were wholly dormant at that date.

Disease in Caladiums.—A fungus closely allied to the one that causes so much trouble to the potato, has attacked the Caladium. It is very bad on the C. esculentum which is much used for food in the West Indies and elsewhere.

NEW OR RARE PLANTS.

Fringed Dahlias.—In Germany, they now have Dahlias which have the petals fringed instead of being cupped and entire. They are said to be very pretty, and likely to be popular.

Narcissus, Rip Van Winkle.—A double variety of this is said to be the most remarkable of the whole family. The flower is greenish-yellow, and the whole mass of sepals very finely divided.

An Early Snowdrop.—It is said that there is a variety of Snowdrop in English gardens much earlier than the other; that when growing side by side, one may flower several weeks earlier in some seasons. It is worthy of note, however, that the difference between the time of early-blooming plants is not every year the same.

Noisette Rose, Princesse Marie de Lusignan.—M. Cochet declares, in the *Journal des Roses*, that this is the most beautiful Noisette ever raised. It is a seedling raised by M. Perny, a musical composer and rose amateur. The flowers are pale yellow, of splendid form and exquisite perfume—the last a rare quality in Noisettes.

New Classes of Roses.—It is remarkable that so little has been done towards improving the wild roses of Europe and America. The garden roses are mostly of Asiatic species. Years ago, a beginning was made with the Prairie rose, but that effort died out. Our many species of rose have a delightful fragrance, are hardy, and have many other good characters to recommend them to improvers.

Rose, Archiduchesse Maria Immaculata.—The *Journal des Roses*, with a colored plate, highly praises this seedling of Soupert & Notting, which they raised by Tea Rose Madame Lambert, with Tea Socrates. The color is a bright brick red.

Aristolochias.—These remarkably curious and always interesting plants, of which the Dutchman's pipe vine is a familiar example, have two new illustrations in Mr. Bull's catalogue now before us. One, Aristolochia elegans, was noted by several correspondents in our magazine last year. The other, A. ridicula, does honor to its name. A little imagination will regard them as like the head of a donkey, with its huge ears spread. It is thus described by Mr. Bull:

"A very remarkable and most interesting new species introduced from Brazil. The tube of the flower is from 3½ to 4½ inches long, abruptly contracted and then bent upon itself below the middle, the basal part being much inflated; the upper portion somewhat conical, widening towards the mouth, which is prolonged into two ascending and backwardly directed lobes, diverging from each other at an obtuse angle. The entire limb is of a tawny color, closely covered with dendritic dark brownish purple reticulations on a cream-colored ground; the lobes are dark with light reticulations, and are sparsely covered with clavate dark purple brown hairs. The bright green leaves are orbicular reniform, with an entire margin; the entire plant, stems, leaves and flowers being covered with hair."

"Japanese Hop.—The new Japanese hop which was introduced last season, proved with me, a capital thing for covering summer-houses, poles, and lattice-work screens with foliage. Planted in good soil, it makes an exceedingly rapid growth, and quickly covers a large space with its bright green foliage. Although well acquainted with all the plants of scandent habit suitable for growing in the open, I do not know of one that can equal it, taking robust habit and effective appearance into consideration. The leaves of the Japanese hop are not unlike those of the common hop, with which we are all familiar, but they are rather more deeply cut. It was very strongly recommended to me last year, and as the seed was comparatively inexpensive, I purchased two packets, one of which was sown in heat under glass and the other in the open. The plants raised in the border made a very satisfactory growth, but they did not attain to such dimensions as those raised with the assistance of artificial heat. The seed was sown in pots in the usual way, and the plants were put singly in three-inch pots, and had the protection of a frame until the end of May. They were then planted out, the soil having previously received a liberal dressing of manure from an old hotbed. The scientific name of the Japanese hop is Humulus Japonicus."—*F. W. in Garden.*

[We believe this is an annual, and it should be a popular vine in American gardens, where Japan plants usually do so well, and rapid growth for shade often desirable. Have any of our readers any experience with it?—Ed. G. M.]

Chionodoxa.—Almost all the popular spring flowers are members of old families. Snowdrops, crocus, tulips and so forth. There have been few additions to the old lists. In Europe, however, the Chionodoxa, or "Snow-glory," seems to have come to stay. Some of the dealers offer the roots by the ten or twenty thousand.

SCRAPS AND QUERIES.

Long Clusters of Wistaria.—The statement made in some catalogues that the racemes of Wistaria, will often reach 3 feet in length in China, has been doubted. In a recent conversation with the representative of the Minister of Agriculture of Japan, Mr. Hida, the Editor was assured that they certainly often reach that length. On the Editor's grounds the longest this year measured thirteen inches.

The Texas Blue Grass.—This is Poa arachnifera, and is very highly spoken of as a good grass for the South.

Mowing Heavy Slopes.—"J. W. L.," says: "In cutting grass with a lawn mower on a slope of considerable inclination, the method customarily followed, at least by the gardeners for the railroad companies, is, to attach a rope to the user of the machine, said rope to be held by an assistant standing on the top of the bank. A second rope is also frequently attached to the machine itself, and is held by a second assistant. The work is certainly onerous for the man working the machine, yet in watching the floundering of one so occupied at one of Germantown's West-side railway stations, it occurred to me that the operator might have saved a good deal of strength and perspiration, have cut a less ludicrous figure, and have performed the work more expertly and satisfactorily, had he been provided with a pair of shoes having deeply corrugated soles, such as are used by lawn tennis players. I so advised him. Is there any worth in the suggestion, and does the Editor know whether shoes of the kind referred to are used as indicated?"

[The suggestion is a valuable one. It is, however, a matter wholly for experiment. So far as we know, it has never been tried in that way.—Ed. G. M.]

Kalmia latifolia.—"Miss S. E. P.," St. Joseph, Michigan, makes the following inquiry respecting the beautiful wood laurel: "Is Kalmia latifolia perfectly hardy, if not, would it flourish in a greenhouse? Is Aristolochia elegans all somebody's fancy has painted it? I have been a faithful student of the Monthly for many years. There is no literature so welcome and delightful as that found in its pages."

[Some plants of the family of Ericaceæ, to which Kalmia belongs—Rhododendron for instance—do not do well in limestone soils. It is many years ago since the Editor was at St. Joseph, but to the best of his recollection the town is on a high limestone bluff, and this may be against success with the Kalmia. It is not probably the limestone itself that proves inimical to these plants, but the pasty soil that results from decomposed limestone. These plants have very fine hair-like roots, that require a large amount of moist air, and hence they thrive only in what is called a spongy or porous soil. The Editor has seen the Mountain Laurel, Rhododendron maximum, thriving among loose limestone rock where the debris had a chance to wash away, in the Allegheny Mountains. It is more than likely that if a little care was made to arrange a porous soil, as we would for Rhododendrons, the Kalmia would be hardy at St. Joseph, and similar situations. A plant is tender, or gets killed under a low temperature, when it is not perfectly healthy through improper soil. In a tub or large pot for a greenhouse or conservatory, the Kalmia ought to do admirably, because there should be no difficulty, by adding quantities of broken stone or brick, in making the earth as porous as desirable.—Ed. G. M.]

A Fine Hermosa Rose.—In a postscript—always the best part of a lady's letter—we read: "New roses you say—give me the old roses a while longer yet! I have a Hermosa 6 feet high and 3 feet through. I dare not try to count the flowers, but I can safely say there are hundreds of them." We do not care particularly to have our friend beaten; but if any one has a finer, fair play will demand that we give the figures a place in our columns.

Styrax Obessa.—A correspondent complains that in ordering this plant from Europe, he received the same thing that a year ago he got from there as Pterostyrax hispida, and he is angry at such a fraud. But we believe it is understood that the names are botanical synonyms which the nurseryman could not help.

Milk in the Norway Maple.—"F. W.," Newark, Wayne Co., New York, writes: "On examining Acer plantanoides growing here as a street tree, I am surprised to find the young growth abounding in milky juice of the same appearance and consistency, thickening and turning dark on evaporation, and nearly as abundant as the common milk weed. I examined all our native maples, including Negundo, also Norway Maple, but find no traces of it. I would suppose anything of so specific character would be noticed, but in none of the botanical works to which I have access do I find it mentioned. On referring it to our county botanist he was not aware of it."

[The thick milky sap in the Norway Maple ought to be well known to the county botanist, for it is on record everywhere in European works relating to the Norway Maple. Kunth's "Synopsis," which every working botanist would want to possess, says, "Acer platanoides; Lactescens," &c. Don's "Dictionary" reads: "The leaves are seldom eaten or defaced by insects, because the tree abounds in a sharp milky juice disliked by them." We need not even go to European works. Darlington's "Flora Cestrica" or the plants of Chester County, Pennsylvania, says, "the leaves are lactescent—its milky juice prevents the ravages of insects." These books we quote simply because they are at hand.

We are glad our correspondent has called our attention to it, for it is one of the valuable facts in connection with the Norway Maple it is well not to forget.—Ed. G. M.]

Beautiful Carnations.—Mr. W. J. Chinnick, Trenton, N. J., sends us a box of Seedling Carnations of the old fashioned, summer blooming strain. These are very good—some of them equal to what they were in the olden times, when

the carnation was a choice florists' flower, and named kinds as common as Dahlias are now. The sight of these beautiful seedling carnations makes one wish that the old florist love for these charming flowers, which bred them up to accepted standards of beauty, could be resurrected.

The Puritan Rose.—The entire stock of this beautiful rose has been purchased by Mr. A. B. Elliott, of Pittsburg, Pa. It is likely to be appreciated by the general lover of roses as well as by the cut flower grower—a point which cannot be said of many new roses of recent introduction, which have only a florist's value in them.

Combination Plants.—A correspondent tells us that if there is any prettier combination to be made between climbing plants than the Chinese Wistaria and the Akebia, as growing over the house of Captain Landis at Chestnut Hill, Philadelphia, she would like to know. It is represented as a beautiful sight to see.

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

THE AMERICAN BEAUTY ROSE.

BY D. M. DUNNING.

I enclose you herewith an article translated from the French, as published in the *Journal des Roses* for May, just at hand, in which the writer, a German florist, claims that our celebrated American Beauty Rose is identical with the old French variety Mad. Ferdinand Jamain.

While such a dénoûment would not be very acceptable to our American florists, who have taken great pride in our celebrated Beauty as an American production, still it may be well to admit, in the way of preparing ourselves for such a conclusion if necessary, that prominent florists in Washington who are thoroughly conversant with the circumstances of its reputed origin there, have, ever since its introduction, had very grave doubts as to its being an American seedling, and in conversation with one of them recently, he so expressed himself to the writer in very decided terms.

Ellwanger describes Madam Ferdinand Jamain as a hybrid remontant of moderate growth, raised by Ledechaux in 1875, deep rose, cupped form, highly scented.

This corresponds closely to American Beauty, except, perhaps, as to the growth; and in the open air it really is only of moderate growth, certainly no stronger than Hippolyte Jamain, Victor Verdier and others, also described by Ellwanger as of moderate growth.

The discovery of its excellent forcing qualities, was undoubtedly the principal cause of its rapid introduction in this country, as, aside from its superb fragrance, it is not, to many people, an attractive rose. Some thoughts brought out by the foregoing are: Have we not already many roses with excellent qualities, slumbering among the ranks of the discarded? Would it not be profitable to expend a portion of the time and energy now so freely given to the production of new varieties, towards investigating the merits of some of the old?

The article from *Journal des Roses* is as follows:

"AMERICAN BEAUTY,

"Or How the Old Beauties Become Young Again.

"The desire of an 'impressario' that his prima donna may appear young and beautiful as long as possible to her adorers, is very easy to explain. That one be able to put back old age, or rather to render young again that which is old, is found to be impossible.

"However, when in the popular German life they speak of the 'Mill of the Youth,' it shows the general desire that this change might take place. That among the Damask roses, old beauties have been again introduced as young by modern speculators in the trade of roses, is what we have seen already several times; for instance, La Reine, Beauty of Glazenwood, Celine Forestier and others.

"However, a few years since they found it good and profitable in America to make appear on the scene of roses, as 'American Beauty,' a French rose of good reputation and acknowledged superiority, viz.: Madame Ferdinand Jamain (Ledichaux, 1875) whose worth had not been sufficiently acknowledged or appreciated. And this rose which has two names now, and becomes young again through the needed advertisement sent beforehand, had in America an approbation almost universal, and has caused a great sensation. We perceive that in the circle where it made its first appearance in Europe, it was received with the greatest attention, and that our German Rosenbarnum seized immediately the favorable occasion, although not the only seller, to make a great deal of money out of it. It is not surprising that on account of the American advertisement, and of the attractive qualities of this rose, people made up their minds to recommend it and to help to its propagation. It is distinguished by its large size, beautiful buds, long and thick, which develop themselves in the cup-shaped form, and have an extremely strong perfume of centifolia; a strong growth, and free bloomer, but over all by its great value as a forcing rose, so great that in one same period of forced culture it blooms again, and almost every shoot bears a flower.

"Having lost almost entirely the first acquisition of this so-called new rose, and that, thanks to the *Reblausconvention*, which obliges the rose bushes to pass through England and Belgium, I was not able at first to decide on its qualities. In spite of that, after having seen several flowers of it, I declared in the first meeting of horticulturists on the 4th of April 1887, that I recognized in American Beauty the variety Madam Ferdinand Jamain.

"In my article in the *Hamburger Garten and Blumenzeitung* on the new American roses for forced culture, which I sent in February, I was showing on this subject that the American rose was similar to Madam Ferdinand Jamain. Already before the appearance of this last rose, whose worth for forced culture I had recognized, I strongly multiplied it during several years, but I found very few buyers for the flowers, or the plants, because in spite of all its other good qualities, the cherry red color of its flowers did not please here. After my observations I have now to maintain the above assertions, that we are treating of a synonym, caused by the happy stroke of the pen of a clever American speculator, or by mistake, or perhaps by ignorance.

"Any how the American Beauty does not deserve to be indicated as new, nor to be spread as such.

"Referring to what precedes, I will at the same time make the remark, that on account of what is established here above, I greatly reduce my demand for American Beauty, though I have large stocks and orders for it.

FR. HARMS, Rosarian, Hamburgh."

Auburn, N. Y., May 24th.

[Mr. Dunning's views correspond wholly with ours, and we think the European article unnecessarily sharp. There is a vast difference between an intention to deceive, and a deliberate attempt at fraud. In this case some one discovered that a rose had great merit. Suppose it was an old rose, no one knew that it had any merit. We hold that a man who discovers a new merit is as much entitled to reward as one who discovers a new rose. Mr. Harms, it appears was very well acquainted with the rose Madame Ferdinand Jamain—but he did not seem to think it was particularly remarkable; at least he made no particular sales.

It is all very well to refer its great success to "American advertisement," but its good qualities backed up the advertisement. Mr. H. sees now that it is "distinguished by" a host of good points. He may have seen them before—certain it is that he could not work off his stock. He found "few buyers" for all his acute perception of its many beauties.

We will venture to say that if the good points put forward by Mr. Harms had been presented with its proper name, the "American Speculator" would have made just as much money out of it, as under the name of American Beauty. Even should he buy it over again under its mistaken name, he would at least have the satisfaction of learning that he had a prize in something of which he was before ignorant.

It is, of course, not right to rush things out as new when a little care would show they were old. More care in this respect would be desirable. But in this case people have not lost very much by the mistake—if mistake it be.—Ed. G. M.]

THE CLIVIA.

BY LOUIS SECKHOUTE.

The Clivia or Imantophyllum is an old plant of the family of Amaryllideæ. Since a long time, we possess two very distinct species—the Clivia miniata and the Clivia nobilis. The flower of the former is comparatively large, with six petals of an orange-reddish color, turning to yellow towards the centre; the flower is wide open, with free petals, erected and gathered in spikes. But the Clivia nobilis flowers are drooping, smaller, of an orange color with green tops, and very little open. By crossing these two species, the C. cyrthantiflora is raised. This hybrid has the habit of C. nobilis, but the flowers are intermediate between the two above named species. About twelve to fifteen years ago, a new strain of Clivia made its appearance. I say strain or breed, and not a species or hybrid, as the plants in question are only perfected Clivia miniata; they are generally known by the name of Clivia with large flowers, and we need not hesitate to say they are one of the greatest conquests made in horticulture. The plants were obtained in this way. Seeds of Clivia miniata were sown, and produced plants, the flowers of which differed a little from the old type. Of course the best ones were kept, and in this way we obtained flowers different from the genuine species. In one, the color was darker; in another, the centre of the flower was of lighter yellow turning to white; in still another, the flower was larger, better shaped, and the spikes larger and better furnished. This was the result of care and patience, because the Clivia seedlings do not flower until the fourth year. If there should have been another species of Clivia in the way of the miniata, having about the same shape and a better color, no doubt we should have come to as good results in a shorter way. The first varieties of this species were:

Clivia miniata robustum—of which the color is only a little varying, but the flowers better shaped and on enormous spikes.

C. m. Vanhouttei.—Color darker and large flowers.

C. m. maximum Vanhouttei.—Perfection of the former.

C. m. splendens.—Having the small foliage of the common miniata, but flowers and spikes greatly improved in size, shape and color.

C. m. perfectum.—Of a dark color and a beautiful shape.

C. Julianna.—Flowers large.

C. m. Mlle. Vanhoutte.—Much improved, both in color and size and shape.

C. m. Seckhoutei.—Very large flowers and lively color, with nearly white centre, enormous spikes.

C. m. Lindeni.—This is one of the varieties noted for the good shape and the beauty of its flower. The middle of the flower is of a yellowish white color.

All these were the first obtained, with a few others beside. All were quite different from the old species (miniata), and it is by the aid of them, and by repeated crossings, are obtained this lovely strain of Clivias generally known by the name of Clivias with large flowers. The growth of Clivias is very easy. These plants can stand above freezing point any temperature, even cold or warm. To have the plants in perfection, put them in a medium temperature, half-shaded and moderately moist. *S. Denis, Westrem, near Ghent, Belgium.*

NOTE ON BOUGAINVILLEA SPECTABILIS

BY MARY B. CONARD.

It is no doubt a gratification to most people to see their names in public print, and after seeing mine in the present month's issue of the GARDENERS' MONTHLY, in connection with the Bougainvillea spectabilis, which has been described by proxy, I have felt how much greater would have been my gratification, had the Editor seen with his own eyes the beautiful Bougainvillea mentioned, rather than take my word for it. It, the plant, really a young one, not being yet planted three years, must have covered 10 to 12 feet in length, and from 2 to 4 in width, every end of branch, indeed all the upper part trained upon the rafter and partition, being densely covered with its rosy bracts. It was a small plant three years ago this coming fall, bought of Charles H. Miller, and was probably one-third of an inch in diameter at the base of stem; was planted near a pillar in north end of greenhouse, which place did not seem desirable, so it was transplanted to its present position, that winter of '85, when it immediately bloomed and though still small was a mass of flowers. It continued to grow vigorously, but did not bloom the second spring; and this past spring, thinking we would make it bloom, finally cut the roots and lifted it bodily from its place in the border, removed some of the soil, filled in pieces of broken pots, stones, shells and rubbish, and dropped the ball into its place again—when almost as soon as it regained its freshness—commenced to show its little green leaves, which grew into rosy bracts. The plant has now over an inch in diameter in stem, but lost many of its leaves while blooming. It has a south-western exposure. Thinking this experience might be of benefit to others who have an unruly plant, I have written thus. *Sharon Hill, Delaware Co. Pa.*

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EDITORIAL NOTES.

IRON-STEMMED TREE CARNATIONS.—An effort has been made in France to produce winter flowering Carnations that should retain their flowers erect on their stalks. This has been successfully accomplished, and "remontants" with "Tige de Fer" are now becoming the popular carnations there.

CUT ROSES FROM AMERICA.—The most remarkable exhibit at the last meeting of the Floral Committee on the 12th inst. consisted in some cut blooms of Tea Rose Puritan, which left New York on the 2d inst, and arrived in the docks at Liverpool at 2 A. M. on April 11. A messenger was awaiting their arrival, who, having secured his prize, left Liverpool by the 3 A. M. express, and delivered the roses to Mr. William Paul at Waltham Cross at 10 A. M. We commend this little history to members of Cobden Club, to Protectionists, Free Traders, and Fair Traders, as a nice problem in political economy. Here is a British rose raiser (Mr. Bennett), who raises a beautiful rose, and, doubtless for a consideration, sends it out of the country. Another rose raiser re-imports it in the form of cut blooms, having doubtless in his turn made some commercial arrangements with the American growers. But while the economists are discussing this question, is there not just a shade of a fear that the English flower-forcer may once more be beaten out of the market by the foreigner?—that is, if we are to consider the Americans as foreigners. Poor British grower: he gets no more than a halfpenny a pound for his tobacco, and New York competes with him in the matter of cut roses. In any case it was a remarkable feat, for the full particulars of which we refer our readers to our report of the meeting in another column.—*Gardeners' Chronicle.*

COLEONEMA ALBA.—Those interested in cut flowers may profit by the following hints regarding a pretty plant from the Cape of Good Hope, which we find in the London *Gardening World:*

"A very pretty evergreen shrub, the Diosma alba of Linnæus, is used at the Cape in bouquets, intermingled among the flowers, in the same way as small subdivisions of Adiantum are commonly employed. The ladies say it is 'everlasting wear,' and survives a long series of dances better than Adiantum. Grown in gardens, it assumes a luxuriant habit, and forms long, slender sprays of delicate green, and it is the young growth that is selected by the bouquetist. The scent, unlike most Diosmeæ, is pleasant, and the foliage outlasts tenfold the quickly withering Fern fronds it replaces. The plant is raised without difficulty from seed, which, however, is rarely to be found in commerce. All the Diosmeæ have a peculiar trick of everting the inner layer of the capsule with a jerk when the seed is ripe, and this makes the gathering of seed very slow and unremunerative."

THE HOLY GHOST PLANT, OR DOVE ORCHID.—A correspondent of the *Garden* says the flowers make admirable button-hole bouquets and are in great request by those who like to have something out of the common line, and still have that which is handsome and beautiful. By peculiar culture they flower freely and large numbers may be had by the lover of cut flowers. The plant is readily obtained by orchid lovers in America from Central America, and it is becoming not uncommon in our gardens. The correspondent thus tells how he grows it so well:

"My plan is to pot high, place a heavy coating of moss on the top of the soil, and to give weak manure water once or twice a week. I cover the big, white, worm-like roots as they make their appearance through the moss with more of the same material. If the plant is in a large pot the bulbs get proportionately large. Never let the plant want for water at the roots, and give it a gentle dewing over-head after bright days. Shade but moderately while the plant is growing, and do not be afraid of moisture around it; expose it to the sun and a dryer atmosphere afterwards, and give less water, so as to induce rest. If I had to start a bulb just sent me, I should pot it in very rough soil consisting of two parts sandy loam, one part leaf-mould—not fine, but rough—one part mushroom manure, some charcoal, and a few inch bones placed in a well-drained pot. I would give but little water until it had started fairly into growth. I would keep the atmosphere moist, but I would not syringe overhead until the foliage was a good size. If surfaced with moss as stated above it will be found that the plant will grow all the better for it."

WATERING FINE SEEDS.—Mr. J. T. Saltau, Little Efford, Plymouth, has forwarded us an ingenious, inexpensive, and useful contrivance which he employs for lessening the stream of water flowing from a watering-pot, as is often necessary when watering small plants, cuttings, &c. The usual way of securing the end in view is by partly blocking the orifice by the finger. Mr. Saltau procures a cork, and burns a hole through its centre by means of a hot iron, and then inserts a portion of a goose-quill which is slightly longer than the cork itself. The cork tapers so that it will suit almost any can. We think our readers may find the contrivance of use, and one that anybody can easily manufacture for himself.—*Gardeners' Chronicle.*

PLANTS AS SANITARY AGENTS.—The *Therapeutic Gazette*, does not seem to admire Dr. Anders' suggestions that plants in dwelling rooms may often be productive of good sanitary results. It has more faith in calomel and jalap, or sulphur and molasses, than a lot of nice flowers. It therefore makes a thrust at Dr. Anders thusly:

"Then there is the question of the diseases of plants, house plants being peculiarly liable to disease. That a very innocent disease of a plant may be a cause of a very serious disease in another plant is also known. Then there is the question of the sanitary condition of plant earth, the questionable soil in which they are potted, the more questionable but indispensable fertilizers, and the still more questionable fermentation and unseen growth in the damp and often sour soil. All these things and more are worthy of consideration before we rush wildly to the florist's rather than to the neighboring pharmacy when sickness breaks out in our families. Were the rosy view of the author to be applied, we should soon be prescribing carnation pinks and rhododendrons as freely as we now do pills, and the florist on the corner would grow in wisdom and pecuniary stature, while the patient apothecary would dwindle; polypharmacy would have its analogue in the polyflorist, who would order his flowers by the bouquet, and the worse the case the more the floral variety. The whole scheme of course needs practical development, but there is no doubt that the developer would appear, if he has not already. And where, then, would homeopathy be, and its sugar and its dilutions? The floral physician called to an urgent case, say of pulmonary hemorrhage, writes hastily and illegibly for ten monkey-flowers and a magnolia, with six lively pine-trees. The servant hastens to the florist, the florist's boy hastens back with a push cart and in a trice the plants are deposited by the bedside of the sufferer. She smiles feebly. The potent influence of properly-selected plant-life, assisted by the active remedial power of scientifically-applied plant perfume, does its work. She is saved! No nauseous doses, but "nature's own remedy," as the specific advertisements put it. How simple and touching, then, the position of the floral physician while the grateful family surround him and present him with the magnolia!"

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

PROGRESSIVE HORTICULTURE—NOTES ON THE GARDEN OF PIERRE LORILLARD, ESQ.

BY WM. T. HARDING.

Presuming a few remarks about snowballs—especially while the weather is excessively hot—may not have a tendency to give any one the chills, I feel encouraged herewith to give a few facts about them, as they were seen on the estate of Pierre Lorillard, Esq., Jobstown, N. J., on the 19th of May.

It may possibly surprise the reader, when informed that the snowballs I write of, did not melt away, as they might be supposed to do, beneath the bright, warm rays of the meridian sun. On the contrary, they seemed to increase in size, rather than diminish. And yet, they were undoubtedly snowballs—after their kind, though not exactly rounded lumps of cold New Jersey snow, composed of "frozen water precipitated from the atmosphere in the form of white crystals," and compressed into hard balls, but were of the Oriental type, and are known to their admirers as Japan Snowballs, or Viburnum plicatum. To attempt to describe any thing more beautiful than a large circular clump of these hardy, free flowering shrubs, as they then appeared on the lawn, would be difficult indeed. The striking effect they produced among other varieties of shrubs and trees, presented a decided resemblance to a rounded mound of snow, flecked with green—rising from the smooth green turf—when viewed from a distance, so densely were the shapely bushes covered with floral snowballs. And their pretty, plicated green leaves appeared quite as attractive as the comely flowers they bore, when closely examined.

Although intending to take a general survey of all things horticultural about this very extensive establishment, the object in particular I was most desirous of seeing was the Orchard House. To simply say I was surprised with what I saw inside, would but half express my astonishment; for never had I before looked upon better results from fruit trees in pots or boxes. More vigorous, or better cropped plum trees than these, I think would be impossible to find in this or any other country. And when the reader is informed these thrifty trees were imported from England about a year ago, he too may find something in the facts described to wonder at.

The trees, both plums and cherries, would average from 6 to 8 feet high, and 4 to 6 feet through; and most of their deep green leaves measured from 3½ inches in breadth to 7½ inches long.

The varieties of plums were Transparent Gage, Green Gage, Jodoigne Gage, Coe's Golden Drop, Kerkes and Jefferson. The kinds of cherries selected, were as follows: Early Bigarreau, Elton Bigarreau, Napoleon Bigarreau, Early Frogmore Bigarreau, Black Tartarian, May Duke, and St. Margaret. The plums, as is usual with them while under glass, were of perfect form, without a blemish, and entirely free from the curculio pest, or any other evil to which they seem heir to in the garden or orchard outside.

There was also a fine stock of peaches and nectarines, literally bending with the weight of fruit they were bearing. All of these were growing in 10-inch pots, and many of which had produced from fifty to seventy-five fruit, and were then just beginning to stone. Of course they would require thinning out. The peaches were chiefly the old, though most excellent Royal

George; while the nectarines were the fine-flavored and reliable Lord Napier, favorites everywhere. These were placed in houses devoted to them in the long range of glass for which the place is noted, and from which crops of other kinds had been gathered earlier in the season.

The neatly-trained, healthy, prolific, and handsome peach and nectarine trees, which with the greatest regularity or uniformity possible, closely covered the wire trellises, beneath which we walked—under glass—were ripening, as their rich fruity odor made us aware as soon as we entered the houses.

Early Beatrice peach and Lord Napier nectarine are highly esteemed, as each are excellent kinds for early forcing. But as Mr. John Gardener, the skillful manager, under whose supervision everything horticultural around us seemed to prosper, remarked, "we only used sufficient fire-heat to gently start them, and have not forced them, as on previous seasons; they are, consequently, later than usual."

These also, were imported trees from England, and are budded upon straight, clean, Kirkes plum stocks, from 3 to 8 or 9 feet high, according to the position they each occupy in the various houses in which they are cultivated. In one house containing eighteen trees—which were planted three years ago, in the prepared inside border—were then bearing some four thousand fruit, which Mr. G. proposes to reduce in number by judicious thinning out.

There were several houses filled with fine ripe strawberries in pots and boxes, the last of the season under glass, which would be succeeded by those planted in beds outside. From the time they begin to ripen beneath the sashes, until the last gatherings are made from the strawberry grounds, Mr. Lorillard and family will have enjoyed a six months' strawberry season. Sharpless, Cumberland and the Parry varieties are mostly preferred to other kinds.

There were also two large houses well filled with strong, healthy and productive tomatoes, which were likewise trained over wire trellises under and near the glass roof, where they had continued in good bearing condition ever since last October; and still, from appearances, seemed able to produce a continuous supply until October again returns. Of the four houses thus used, two of them were then filled with healthy grape-vines —in pots and tubs—and which were at the time of my visit there showing an excellent crop of fruit. And thus, no sooner does one crop of whatever kind it may be begin to indicate its best days are over, than it is cleared out and succeeded by something else specially made ready for that purpose. And in that way a constant succession of either fruit, vegetables or flowers always seem ready for picking.

In tubs and pots, large quantities of fruitful fig-trees were luxuriating. Of the several kinds under cultivation, Fleming's famous Negro largo is considered the best, and of which Mr. G. had succeeded in grafting a goodly number upon the common fig stocks.

The grape-vines, growing both in pots and in the borders, were in various stages of growth, and were promising excellent results.

As a grower of Gardenias, I verily believe the enterprising cultivator, who may justly feel proud of his success, has no superior. A cleaner stock of healthy, floriferous plants, I feel certain was never seen elsewhere. And some six thousand of these pure white sweet-scented flowers, had been cut during the six previous weeks, and without apparently diminishing the number.

Of Orchids, there was a choice collection in good condition. And the same may be said of the gorgeous Amaryllis, which is also a favorite here, and out of two hundred seedlings fertilized with pollen of the best European species, something valuable may reasonably be expected.

The Christmas batch of Roses, having had their day—under glass—earlier on, were removed outside; immense blocks of which were ripening their wood, ready for similar service when winter returns.

As it would be impossible to enter into close details, in any description I might attempt, without occupying too much valuable space, so will abruptly conclude by saying the visit was a most agreeable one, and am hopeful of often repeating, as I feel deeply interested in the able manager's successful methods of demonstrating progressive horticulture. *Mount Holly, May 28th, 1887.*

WOOD ASHES AND PEAR-BLIGHT.

BY ERNEST WALKER.

As to the value of wood ashes in not only preventing but curing blight in the pear, there can be but little doubt. Coal ashes have been also advocated and tried, but they have not the same value; and when contrary opinion has existed it originated in the following way. Horticultural societies have discussed the question a great deal of late, and the "burden of proof" is with wood ashes—negative results coming in every case (as far as I have learned) from those who had used coal ashes.

Coal ashes are beneficial, but wood ashes, it seems, are preventative and curative. In some cases it may fail, so do what are recognized by doctors as the best medical remedies.

Mr. Fraily, who resides in the northern portion of this state, first called my attention to this remedy. Fifteen years ago a number of pear trees in his orchard became badly blighted, apparently beyond recovery. One or two of the trees which he allowed to go too far died. But the rest he restored to vigor by a coating of wood ashes under the trees. Since that time he has kept up this practice and the original trees are healthy and bearing annually.

In one or two instances where a tree, perchance, was overlooked, the blight showed signs of reappearance, but by immediate attention he stopped it in every case by again resorting to wood ashes.

As a remedy here, and in the case of peach borer, as well as a vegetable tonic, the value of wood ashes is being recognized, but not as rapidly or universally as it ought. *New Albany, Ind.*

[Wood ashes make an excellent fertilizer for pear trees, and there can be no doubt that anything that adds to the constitutional vigor of a tree is an aid in resisting disease.

The researches of Prof. Burrill and T. C. Arthur show that bacteria have so close a relation to the disease that they are probably the cause—they say positively they are the cause of fire blight in the pear. This being the case it is not clear how anything applied to the roots can be an absolute preventative. Experiences like these are, however, valuable, as they lead to the testing of theories, which is always a gain to practical gardening.—Ed. G. M.]

MANURE FOR STRAWBERRIES.

BY "SEEDLING."

I have read that stable manure is not good for strawberries. They say—I do not know who, but I suppose people who are looked up to—that it makes the plants run to leaf when we want fruit and not foliage. I am only an amateur and have only a small garden, but I love that little garden and the strawberries that grow there. I like to note how this thing does and that thing does, and sometimes I think I know as much as "they" whoever they are. Now—perhaps I may be voted a horticultural heretic—but I am bound to express my views, I do not believe stable manure hurts strawberries one bit, but believe the more they get the better. There now! I feel easier. My mind is relieved.

I like—I am writing as an amateur in a small way—I like to make a new plantation of strawberries every year, and let the plants stand two years. I like to get the plants as strong as possible—young runners, and plant in September. But you ought to see how I manure my bed before I put the plants in! Two inches deep;—as rotten as we can get it,—and the ground dug as deeply as the fork will go. This lasts for the whole two years. I like to preserve the leaves green and fresh all winter, for you know the strawberry is naturally an evergreen, and like all evergreens, suffers by losing its leaves before its time comes. A very thin layer of rye straw spread over the plants keeps the leaves green and fresh. This is so thin that the earth can be seen everywhere through it. It is surprising how little straw will keep the leaves green. If I had not straw handy, I would use leaves, or any other littery matter that would not blow away. If too deep a layer be placed over the leaves, it may injure by rotting. The leaves need only the thickest rays of the sun broken.

In the spring, as soon as the ground is dry enough, the ground is hoed to keep from caking, and also to keep weeds down.

Mulch is often recommended by some writers to keep the ground cool and nice. My ground does not need this but it keeps the fruit nice and clean, so, after the second hoeing, just as the flowers are opening I put corn-stalks, between the rows right up under the plants; after the fruit is gathered, I take up the stalks. In my small patch of 100 feet by 70 feet this is no great task. I then keep the ground hoed and clean all summer, cutting off all runners that come between the rows, but letting the plants grow together in the row if they will.

The second year is the great year. The treatment is just the same as the year before. I do not bother about hoeing after this second season's crop is cut. If however I want to get a few hundred plants for setting out for a new bed, I fork up a piece between the rows, well manure it, peg down the first plants that appear, pinching the runner back so that it produces only one plant. Then I have beautiful plants for the September setting.

Now as I have said I am only an amateur, but I can beat any strawberries I see in the stores. If any one can tell me how to do better, I would love to learn. *Frankford, Philadelphia.*

EDITORIAL NOTES.

Retail Prices in Philadelphia.—Distant readers often get the wholesale prices of fruits and vegetables, but it may be of use to have the retail prices at different dates. On the last day of May peas raised near Philadelphia brought 25 cents the half peck; asparagus, 20 cents a bunch; cauliflower (from frames), 15 to 25 cents per head; beets, 15 to 20 cents a bunch. From more Southern regions, string beans 70 cents half peck; onions, 15 cents a quart; cabbage, 8 to 15 cents a head; squashes, 10 to 15 cents each; tomatoes, 20 cents a quart; cucumbers, 10 cents each; potatoes, 25 cents a quart; strawberries were 25 cents a quart, and Florida peaches, small things, 30 cents a quart.

The Strawberry Season in Philadelphia.—This fairly opened on the 28th of May, when no less than thirty-five car-loads came into the city from Maryland and Delaware. The largest berries wholesaled at 18 to 20 cents a quart. The average sized, 8 to 12 cents, and smaller stuff at 8 cents. It pays to grow fine fruit. This is never a drug.

Paris Green for Apple Worms—Beware! Prof. A. J. Cook, of Agricultural College, Lansing, Mich., announces: "In Bulletin No. 26, issued last week from our Department of Zoology and Entomology, on page 6 a typographical error makes the proper proportion of Paris Green or London Purple to water, for spraying apple trees for the Codling Moth, to be one pound of Paris Green to two gallons of water; whereas the proportion should be one pound of Paris Green or London Purple to two barrels or one hundred gallons of water."

Preserving Apples from Worms.—At a meeting of the Michigan Horticultural Society, W. A. Brown of Benton Harbor said growers in that vicinity had for three years practiced spraying apple trees with Paris Green with great success. Sprayed on just after the blossoms fall, the poison seems to kill off the brood of moths that survives the winter. This brood is small, comparatively, the main damage being done by the later hatchings. The effect has certainly been marvelous in making apples perfect, even when the adjoining orchards were not treated—showing that the moths migrate but little. There is danger of injury to trees by use of too strong solution. He used one pound to 50 gallons of water, but half the quantity is sufficient. W. N. Cook spoke of the danger to the operator. Do not allow the spray to be blown back against you.

A New Enemy to the Peach Grower.—We never knew the rose bug, macrorhyncus subvestititus, to be of any serious account to the peach grower, but it seems it gives trouble sometimes. *Every Evening* of Wilmington, Del., prints thirty-four letters from correspondents, chiefly peach growers throughout the peninsular peach region. The indications in the main are for a general yield ranging from fair to good. A summary of the reports received shows thirteen good, fifteen fair and only six poor. The poor reports come entirely from the edges of the peach belt, the reports from the heart thereof being uniformly encouraging, notwithstanding some depredations by rose bugs, the extent of which cannot yet be determined. This pest was first heard of near Greensborough, and spreading thence to the east and northeast and more slowly westward. Wyoming reports "rose bugs with us, eating up all kinds of fruit, but do not think they will endanger the peach crop."

Magnolia reports "rose bugs now biting a good many peaches and other fruits."

Frederica—"Bugs committing great depredations on young trees; on old trees they are not so severe."

Denton, Md.—"Rose bugs cutting orchards and running crops on eastern edge of county; seem to be coming west." Orchards near the bay, which in some short crop seasons proved conspicuously productive, seem to have suffered much this year from fogs. The June drop is yet to come in most localities, but appears to be pretty well over in Western Sussex and Southern Kent.

The Currant.—This still continues to be one of the most profitable fruits to the market gardener. We never hear of any glut in the market with them, and the price is usually steady at 8 or 10 cents per pound. The best results come from somewhat elevated regions. For the latitude of Pennsylvania better fruit is had from an elevation of 1,000 feet, than from plateaus near the sea. In low flat lands they lose their leaves early, and the fruit next year is small in consequence.

The Foreign Grape in America.—The numerous efforts to succeed with the foreign grape on the eastern slope of the American Continent, have always proved failures—of late years all attempts have been abandoned. It is, however, pleasant to find that there are some who continue to hope, and to try, and we are all praying that they may have the best of success. The very intelligent German gardener to a gentleman near Philadelphia, feels so sure of success, that some thousand plants imported from the Old World, have been set out by this gentleman. In order to insure success, no effort has been spared. Men have been employed for many days in sub-soiling the ground two feet deep, after the Old World style, and it has been highly enriched. The result of this experiment on this elaborate scale will be looked for with great interest.

Celery Growing in Small Gardens.—The market grower has to do things in a very different manner from the amateur. With the former, profit is the first consideration. The latter aims chiefly at excellence. From an amateur's stand-point, the following chapter on celery from the *Garden* is one of the best we have ever read—and though written for the growers of England, will furnish excellent hints for our people:

"In many gardens, especially small ones, celery is the only salad plant to be found in winter, and, apart from its value in this way, it is also most acceptable as a culinary vegetable. No labor should therefore be spared to make the supply of it as plentiful and good as possible, but celery which might be in prime condition in August and September will not be of much value now, as it becomes soft in the centre and not so crisp and firm as when it is approaching full size. The best celery for winter use is that which is now only about three parts grown, and spring celery need not be more than half grown at the present time. The winter celery crop should extend from November until March. Its most injurious enemies are damp and frost. Deep trenches on each side of the plants will help greatly to drain off superfluous moisture from them, and where there are only one or two rows together a good bank of soil put against them (as is done in earthing up) will prevent a great deal of rain from reaching the plants, as it will fall on the sides and run off. A quantity of finely sifted ashes if placed round the plants at the last earthing up will prevent them to a great extent from decay, as the ashes do not cling to the leaves like sticky soil. All earthing up of winter celery should be completed as soon as possible, and it is most important that the soil be prevented from falling into the centres of the plants. This is injurious at all times, but more particularly now, as damp earth will cause the interior of the plants to quickly decay. If each plant is tied up firmly with a piece of matting before earthing, and it is afterwards removed, earthing up will be more easily and safely done than when untied. I do not approve of lifting a large quantity of celery and keeping it stored away for use. This plan is convenient if practiced before a protracted frost sets in, but it does not possess any other advantage. The plants should be well protected in the trenches at such times, and this may be done by putting a good band of hay or straw round each, but it is not safe to allow this to remain on when there is no frost, as it may cause the plants to perish from damp. Timely protection is the secret of successful preservation; there is little or no use in covering them up after the leaves have been almost reduced to a pulp by frost.—*J. Muir.*"

A Poisonous Mushroom.—The *Revue Horticole* says that Agaricus bulbosus vernus, killed thirteen persons last year, within the knowledge of Professor Planchon, of Montpellier.

NEW FRUITS & VEGETABLES.

New Fruits.—Scarcely a season passes without a sort of exciting anticipation over the trials with new fruits. But the past spring there has been little of it. The season is passing and no fog horns are blowing, and the old regular line vessels seem to have clear sailing before them. Has the public became satiated? or simply confused with the immense number which have been in the past presented as the most wonderful discovery ever made? We hope, however, the reaction will not push us to the opposite extreme. There is generally a steady advance, and we hope our friends will keep us posted, if a really good fruit appears among the host of novelties offered from time to time.

White Gros Colmar Grape.—There has not, of late years, been any good addition to the list of hot-house grapes. Among late keepers, the Gros Colmar is a well-known black, and popular. A white Gros Colmar has appeared in England, and is said to bear as good as its black namesake.

Stachys affinis.—At one of the recent meetings of the National Horticultural Society of France, M. Chappellier exhibited tubers of this new esculent from Japan, which is of the easiest possible cultivation, and which may be planted at any season of the year. Two or three tufts yield sufficient tubers for a dish. They contain no starch, but instead of it the substance known as inulin, the main constituent of Jerusalem Artichokes. It is to be hoped we may soon have an opportunity of testing the value of the plant here, for if all be true that is said concerning it, it will be valuable for cottagers.—*Gardeners' Chronicle.*

SCRAPS AND QUERIES.

Pistillate Strawberries.—"Homer:" There are strawberries without stamens; of which the

Crescent is a modern example. They will not bear strawberries, unless pollen from other kinds that have stamens reach them. This is probably why yours are barren. These sexual characters are not absolute, as sometimes a variety that has no stamens will develop them ; but the characters are permanent enough to make a practical distinction. The Hermaphrodite strawberries are those which have stamens and pistils in the same flowers. They are always reliable for a crop. Once in a while a Hermaphrodite will abort their pistils, producing only stamens. This occasionally happens to the Albany seedling, and your barren plants may be a case of this kind. You will learn much by a careful study of the flowers in the different kinds of strawberries. Take a pocket lens with you when you go to your garden. A fruit-grower should never be without a lens.

SUMMER PRUNING OF GRAPES.—"An Amateur who is learning," Wilmington, Del: There is no art in summer pruning grapes. Simply do not allow any shoots to grow that you do not want to retain next year. Go over the plants occasionally, and rub out with the finger and thumb the sprouts you do not want. This is particularly desirable in young vines. This is all there is in summer pruning grapes.

THE IVES GRAPE IN GEORGIA.—"B. L.," Atlanta: Mr. Berckmans can possibly give you further information ; but it is no reason that the Ives was good for nothing but wine in Ohio, that it should not be a good table grape in Georgia. The Editor has eaten Ives in Tennessee, that were good enough for a very critical taste. No one knows exactly why, but it is certain quality varies remarkably with location in grapes.

FORESTRY.

COMMUNICATIONS.

TREES, THEIR USE AND BEAUTY.

BY WM. T. HARDING.

Of the divine origin of trees, no reasonable doubt can possibly exist in the minds of all capable of understanding the records of Sacred Writ. In it, we are informed that "out of the ground made the Lord God to grow every tree that is pleasant to the sight and good for food." And ever since the remote period, when they are first mentioned as having taken root in the virgin soil, we may naturally infer that the higher nations rose in civilization, the more they would admire and appreciate the arborescent growth the bountiful Creator had provided, so "pleasant to the sight and good for food."

The many pleasing allusions to trees the Book contains, assure us the good people in the long ago were not unmindful of their use and beauty. And as the voice of God was first heard among trees in a garden, how natural it seems to us in these degenerate times, to believe "the groves were God's first temples ;" and where in leafy seclusion fallen man may calmly meditate and "look through nature up to nature's God."

Without at present presenting further references to their Biblical history, let us briefly look at them with æsthetic eyes, where we find them "in mossy mead and shady dell," and the more we see of them in their native habitats, or where placed by the hand of intelligent man, the more we are likely to love them—yes, to love them. But to those who may not have opportunities to enjoy a ramble among them, however much they may desire, I respectfully call attention to what others have said about them, and to which I will venture to add a few suggestions and observations of my own. And by way of illustration, I will quote from an eminent writer, who, in every sense, was highly qualified to graphically delineate whatever subject he essayed to discuss. And in so doing, I hardly think it possible for poetic pencil to draw a more enchanting picture of a sylvan scene, where captivating nature appears to have so highly excelled in rendering the balmy greenwood shades so delightful to meander among, as the following sentimental lines from the pleasing pen of Sir Walter Scott.

It will be observed, that in every line, the marvelous strokes of his graphic limning may be seen ; and in which, the most perfect of artistic touches imaginable catch the discerning eye and heart, with enchanting idealic views of lovely landscapes, and fascinate us with romantic glimpses of undulating woodlands. And these matchless sketches, are all exquisitely delineated forest scenes, descriptively true to nature in their umbrageous resemblance of arboreal elysians. And

as the interesting panorama unrolls before the mental vision of the reader, and appeals to his love of the beautiful, makes it difficult to believe during the engrossing moments, that he is not actually on the picturesque spot, with which the sensitive mind is so deeply enamored. And as the writer transcribes the pleasing pictures of waving woods, vernal groves, and "each dingle's bosky depths," and in fancy rambles to where

> " The solitary woodlands lay
> As slumbering in the summer's ray,"

the refreshing odor of wild flowers, blending with the scent of graceful fern fronds and green wood-moss, seems to greet him again. And while thus delightfully absorbed with the landscape's charms, imagination returns to where the woodlark's melodious sonnet, commingles with the sweet carols of the linnet, finch, blackbird and thrush, while among the trees, "the wind breathes soft as lover's sigh."

> " 'Tis merry in greenwood—thus runs the old lay,—
> In the gladsome month of lively May,
> When the wild bird's song on stem and spray,
>   Invites to forest bower ;
> Then rears the ash his airy crest,
> Then shines the birch in silver vest,
> And the beech in glittering leaves is drest,
> And dark between shows the oak's proud breast,
>   Like a chieftain's frowning tower ;
> Though a thousand branches join their screen,
> Yet the broken sunbeams glance between,
> And tip the leaves with lighter green,
>   With brighter tints the flower :
> Dull is the heart that loves not then
> The deep recess of wildwood glen,
> Where roe and red-deer find sheltering den,
>   When the sun is in his power."

It is questionable if ever the English language was couched in a more winsome diction than the talented author uses in the above lines. His sublime conceptions of the varied charms of natural scenery, pure and simple, as the Creator designed it, and, as he viewed it, unmarred by the hand of man, are truly wonderful, as his inimitable witchery of word painting proves.

The prosy and facile pen of William Gilpin, in his "Forest Scenery," has given us many delightful essays upon the subject under notice, both practical and sentimental ; and are as instructive as they are pleasant to peruse.

The brilliant, scholarly, though somewhat erratic Byron, who must have often felt "the charm of a poet's dream," especially when meandering alone through shady glens and dingles, inhaling the healthful odors of the grove—while communing with placid nature, and listening to the peaceful sounds of forest life, which gently whispered soothing words of comfort to his troubled mind—exclaims, "There is a pleasure in the pathless woods." Surfeited, and disgusted with "the deceits of the world, the flesh and the devil," as he was—he knew there was no dissembling there, as nothing false or untrue—animate, or inanimate, is a natural denizen there. No, whatever else might be delusive about the busy haunts of men, all things there were what they seemed to be. And who has not experienced—who has lived long enough—that which the poet expressed in the remaining part of that remarkably beautiful stanza? when reviewing the strange mutations of the past, while musing in umbrageous solitudes. And many are the poetic effusions of gifted authors, whose delight it was to "hold up the mirror to nature," when portraying pastoral, or woodland scenes.

Ever since the days when the lofty trees of "the sacred groves" have "cast their shadows from on high, for Time to count his ages by," has contemplative man entered the leafy sanctuary with reverential feelings. There is invariably a most pure and satisfactory pleasure to be found in peaceful arboreal recesses, where, for a time, we may forget the strife and contentions which alas! too often, vex and perplex us elsewhere. Happily, in some shady silent glen, or beneath the majestic forest trees, where avaricious man has not yet destroyed them, we may still enjoy the cheery smiles of the fair face of Nature, which never fails to charm the sensitive and appreciative beholder.

Then again, there is an indescribable grandeur about massive, stately old trees, which God seems to have given them to excite our admiration for His goodness to us poor erring sons of men. No monument ever built by man, however ponderous, chaste, or magnificent it may be—and there are thousands of excellent examples of his skill in all civilized lands—can compare with arboreous beauty.

The learned author of the "Arboretum et Fruticetum Britannicum," sensibly remarks, "Trees are not only in appearance the most striking and grand objects of the vegetable creation; but in reality they are those which contribute most to human comfort and improvement. Every one feels that trees are among the grandest and most ornamental objects of natural scenery. What would landscapes be without them? Where would be the charm of hills, plains, valleys, rocks, rivers, cascades, lakes, or islands, without the hanging woods, the widely extended forest, the open grove, the scattered groups, the varied clothing, the shade and intricacy, the contrasts, and variety of form and color, conferred by trees and shrubs?" Were such an awful calamity to befall us, as the total destruction of our trees, shrubs, and herbaceous growth, with which at present the earth is so abundantly clothed, this pleasant world, heretofore so enjoyable to live in, would soon become as dismal, dreary, and uninhabitable as the sterile sands of the desert, or barren volcanic slopes, and from the face of which, not only man, but all respiring nature would soon cease to exist; and our planet would become as uninhabitable as the dead and cold regions of the moon. And yet, from the constant destruction of the forests, which has steadily gone forward ever since the first white man began to wield his axe among them, one might reasonably imagine from the immense number destroyed, that the object aimed at, was ultimately to sweep them from the surface of the earth, and thus bring about so sad a catastrophe.

Possibly, "the bump of destructiveness" had not developed in the well balanced heads of the sons of the soil, ages ago; and which is at this time so conspicuously prominent in the caputs of modern anti-arboriculturists—of this tree murdering generation, who always seem ready to chop down a tree but never find time to plant one. In France, if a man cuts down one tree he must plant two. And were we in this country to adopt a similar plan, the immense benefits derived from it would be incalculable.

I cannot help thinking, whenever I see some sour-visaged man deliberately sharpening his axe to fell a grand old tree—that ought to be spared, and which all intelligent people, save himself, would greatly admire, that he must be as wicked and remorseless as was either Danton, Samson, Barere, Robespierre, of hateful renown.

Deplorable as is the unrestrained tree slaughter already accomplished, and upon which the philosophic eye looks with dismay, we are led to enquire what must the consequences be to those who follow us, if so unwise a practice is much longer pursued? So true it is, that "coming events cast their shadows before;" and yet, the same stupid apathy continues, regardless of the future. And those who ought to know better take no heed of the repeated warnings; and one of the results which too often follows, is the appalling destruction of life and property by tempest and flood.

When large gaps or clearings are made through the dense forest growth, the howling, pitiless "storm fiend," swiftly riding on the sweeping wings of the fearful tornado, or fiercely whirling cyclone, seems ever ready to rush through the wide openings the wood-cutter makes, to carry death and destruction in its path; and thus lay waste, where before the gladsome home scenes of peace and plenty smiled.

Whoever has experienced what a "hard winter" means, in the cold West, and "felt the icy fang and churlish chiding of the winter's wind," where everything ligneous, that once bore a leaf, and was big enough to form a fence rail, or saw into fire-wood, has been ruthlessly cut down, without even leaving a few trees or bushes for wind-breaks for the poor shivering sheep or cattle to find shelter under, will remember the sad sights they have seen of suffering animals huddling together for mutual warmth and protection. With extremely rare exceptions, "out West," is any shelter or protection afforded them, when pelting hail, chilling rain, drifting snows, and piercing winds, seem to penetrate the unhappy creatures through and through. The further we go towards the setting sun, the more frequent will such truthful pictures become, of many such treeless, cheerless spots, which greedy and unfeeling men have made, when selfishly determined to get all they possibly could out of the land, in their time.

The fearful floods, which with much regularity wreck the homes, devastate the farms, and too often drown the unfortunate people and their belongings, may be attributed to the denudation of the woods and forests; which when well cleared off and leveled, afford no means of obstructing or checking the rushing waters, which after heavy rains, immediately pour into the overflowing brooks, creeks and rivers. And time and again it has been proved that one of the main causes of the drying up of the natural water courses, which used to furnish a constant supply for the animals about the farms and other purposes, is ascribed to the same circumstances. True, geological changes taking place in the earth's structure, may also affect the springs; and so may seismic disturbances, but generally speaking, the lack of trees is more frequently the cause of dried-up rills and rivulets.

The deep snow drifts which seriously impede railway travel, and often imperil the lives of the imprisoned passengers, and cause much suffering and death to the poor, unhappy dumb animals in transit, are caused by the keen cutting winds sweeping the snow from the bare surface of country over which it falls, in consequence of the insufficiency of trees and bushes to prevent its drifting and blocking up the iron roads. And the heavy losses sustained by those financially interested in railways which run through the snowy regions, has at last induced them to devise a temporary method of protecting the roads from accumulating snows; and at an enormous expense, many miles of covered sheds have been built over the tracks, only to be crushed in beneath the immense weight of snow, beneath which they are buried. As the housing or shed system has not exactly accomplished what the sanguine originators expected of it, the more sensible and efficient plan of setting out thick plantations of thrifty young trees for storm breaks, where they will have a tendency to check the wind-driven snows, will remedy the evil. If liberally planted, of both evergreen and deciduous kinds, they will soon form natural barriers, against which the blood-freezing "blizzards" may vainly blow. Besides improving and adding so much to the beauty of the otherwise dreary sameness of landscape, they furnish the most effectual means possible of giving comfort to man and beast, and through which, "He tempers the wind to the shorn lamb."

The timber question is a most important one, and urgently calls for our serious consideration, as the supply of which is rapidly diminishing. Vast areas of territory, upon which millions of useful trees once flourished, are continually being disforested by the incessant strokes of the wood-cutter's axe, in order to supply the increasing demands of the voracious and insatiate maw of civilization, which is fast devouring all the timber it can be fed with, without cessation, yet never cries hold! enough.

If the present rate at which it is now being consumed goes on for the next fifty years, without attempting to make good the loss by planting young trees, there will be a timber famine in this once beautiful tree-covered land. Then the unhappy winter-frozen and summer-scorched people will bitterly curse the money-hunting, lucre-loving misanthropes, whose greedy propensities brought them to such a deplorable pass.

"As ye sow, so shall ye reap," is a trite aphorism, which equally concerns both producer and consumer, and behooves us to study well its implication. And this often-quoted text, suggests the simple, though important query—how long can anybody possessing the most meagre knowledge of political economy, expect to keep reaping without sowing?

The ancient fable, about which everyone knows, of the valuable goose which daily laid a golden egg, and was a sure source of profit as long as it generously continued to leave an auriferous deposit in its nest—as history informs us it did with the greatest regularity possible, until one day it ceased to yield any more to its covetous owner, on account of his unnatural treatment to poor good natured goosy—is as useful to "point a moral and adorn a tale" at this day, as it was in the olden time. And it would be well to ponder over it, and see if it does not present a parallel to the false economy, ungrateful and avaricious men too often pursue in their inordinate haste to get rich.

Professor Rothrock recently remarked: "That in spite of the common belief to the contrary, this is not a timbered continent, only 16½ per cent. of the whole area remaining in timber. This is within 1½ per cent. of the condition when a nation begins to experience a dearth of timber, and climatic changes begin to take place."

Now these are startling facts to make known, and deserve the serious consideration of every body who has any regard for the future welfare of our race. And if, as is often asserted, "history repeats itself," the fate of this prosperous and happy land may, in the not distant future, resemble the fall of empires in the Euphrates Valley, which has been attributed to clearing off the timber—as we are informed.

No wonder that wise, philanthropic and intelligent individuals, from time immemorial, have manifested an ardent love for trees, as have also their revering, cultured descendants, when their honored predecessors passed away, likewise cherished a strong regard for them. For have they not been useful, beautiful, comforting, and I may add companionable, in every age since our first parents found shelter and bliss among them, before the days of toil and trouble began, when sighs and tears were unheard and unseen, and pain and sorrow were unknown.

Those hallowed enclosures, the rural cemeteries, where we at last affectionately deposit our departed kith and kin in their final resting-places, would be gloomy places indeed, were it not for the cheerful effects which the flowers, green grass, shrubs and trees impart to the sacred spots. And possibly the venerable Abraham was the first man who by example, demonstrated a love for trees in cemeteries. See Gen. 23, which describes the first recorded transaction in real estate, when the patriarch bought "the field of Machpelah," in which he buried the remains of his beloved wife Sarah. This interesting circumstance plainly shows how very sensitive he was for arborescent beauty, when he stipulated for "all the trees that were in the field, and were in all the borders round about."

Strange as it may appear to those who recognize the grandeur, harmony or beauty of landscape, that there should exist others so stupidly indifferent to the charms of nature, so pleasing to the eye of taste, and yet is unseen by them, and who never look upon flower or tree with the least admiration, or even listen with delight to the little warblers, who flit happily among the green bushes with hearts attuned to love.

That there is an unaccountable antipathy to trees, among the ignorant of both rich and poor, which extends even to the street shade trees in country and town, is painfully evident from the shameful way in which they are carelessly or purposely abused. For no sooner do the handsome trees along the city side-walks attain to a proper size, to afford an agreeable shade in the sweltering summer months to the perspiring pedestrian, whose blood at fever heat is surging through his swollen veins, and panting with giddy brain almost on fire, longs for the shady, cooling, breathing spot, beneath the thousands of leaf fans constantly in motion above him, than some tasteless, soulless, malignant biped, who probably does not know the name of one tree from another, thinks it is high time to maltreat and mutilate them with axe and saw. And the next thing we see, is the slashing muscular tree-butcher, with evil in his eye, bent upon carrying to the bitter end the baneful designs of the detestable tree-hater, who hired him to do such a devilish job. And this occurs just as if in the illimitable space above, there was not room enough for them to gracefully ascend and expand. There is hardly a street shade tree to be seen large enough to chop at, that has escaped the cold steel of the vandals, as their mangled and disfigured appearance silently testifies to the bad usage inflicted.

As retribution, in some way or other, always follows acts of injustice, to whosoever wilfully does wrong, even to a tree, which we are assured "God saw that it was good," when he gave to it a living form, and which, to those capable of exercising intellectual tastes, is confessedly a most beautiful thing.

There would undoubtedly be fewer cases of sunstroke, if trees were more liberally planted and encouraged to grow during the heated term we annually pass through.

And while discussing the subject of shade trees in particular, before these desultory remarks are brought to a close, I will venture a word of advice to all who enjoy "the goodliness of trees," which not only add to the adornment of our homes, crowded streets and thoroughfares, but materially aid in giving health and comfort to those who use them. Let well enough alone, when you see a handsome vigorous tree, and do not attempt to improve their natural grace and beauty by injuring or disfiguring them with axe or saw in the hands of some poor ignoramus, who can give no better reason why he chops this branch off, or spares the other, or cuts the whole tree down, than he is paid for what he is doing. And always remember that when a tree presents a healthy condition, the immense leaf surface spread around us is one of Nature's ways of assisting to cool off, and put in motion the heated atmosphere, and thus render the surface of the earth as healthy and enjoyable to man, as it is to the lower orders of creation, who gratefully accept the inviting shade.

By following these suggestions, not only will money and health be saved, but the comeliness of the trees also. Then ligneous deformity, decay and death, will be the exception rather than the rule—which too often prevails.

As a last remark, I cannot help quoting how well Coleridge describes the grateful feelings of the appreciative and tender-hearted man, in these lines:

> "He prayeth best, who loveth best,
> All things both great and small;
> For the dear God who loveth us,
> He made and loveth all."

Mount Holly, New Jersey.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

A PRACTICAL GLANCE AT BOTANY.

BY ERNEST WALKER.

Many there are who set a very small estimate upon the practical value of botany. Not only is this true of many whose education is entirely practical; but of others and not a few who can boast of more liberal attainments.

By some botany is looked upon as a study, suitable only for girls, invalids or "dudes," or as a mere pastime for luxury. While the more "practical" says, "Of what value is it to me, or any body else, hoein' onions or holdin' a plow to know, calyx, corolla, stamen, or pistil, hirsute, villous, glaucous or truncate?" "The United States 'ed' be my Uncle Sam just the same whether the leaf is entire, or lobed, truncate, or acuminate; smooth or villous. All the botany, chemistry and other sciences ever made 'ed' never make an onion grow."

The fact is these "practical people" are condemning a splendid friend whose acquaintance they have never made. They see botany as a dwarf when it is a giant. They look at it with a pocket lens, and a poor one at that, when it takes a telescope to view it. They drop themselves down in a narrow hole in the ground, look up at the sky and say, "I see but one star and that don't throw much light in this hole."

What is the trouble? The question can be answered in a very brief way. They claim the world is not round, just because they have not made the journey or even began. Or the righteous distaste of their parents for the hard terms and names of "old-fashioned" botany they have inherited in the form of prejudice.

This dislike of our ancestors for the botany of a few generations ago was not, we must say, very unjust; for the subject in those days amounted to little more than a skeleton, of which the long, hard names and adjectives were the dry bones; and those who were so unfortunate as to get hungry for botany were fed on these dry bones. No wonder they didn't relish it.

But botany with all other of the natural sciences has made a wonderful development since those days, and even within our own time. It now treats of living things, in a living way, and with a living interest. And it is taught and to be learned in the same way. It no longer treats merely of forms and names, but the things, and living things themselves, their distribution, their structure, how they live and what they are good for; or in other words, of their important uses, and relation to man, animals and the inorganic world.

But where are the practical results? It has unfolded the secret of diphtheria, scarlet and yellow fever, cholera, malaria, typhoid fever, putrid sore throat, catarrh, and a large class of diseases that for centuries were a mystery.

"But these are the revelations of the microscope." True—but the causes of the diseases spoken of are plants, and their study and investigation falls within the province of botany.

And not only of many diseases affecting animals but of those destructive to our most valuable fruits and crops, such as pear-blight, grape-rot, potato-rot, wheat-rust, mildew, etc. It has not in all cases furnished the remedy; but has afforded more intelligent methods of fighting such enemies and a surer and shorter route toward the remedy. For instance, it tells us of the conditions of their development and attack; knowing which we are often enabled to guard against them.

But for a commoner value. We are not all doctors, or microscopists, but preachers, merchants, farmers, florists and gardeners.

As for the first class—the Saviour culled some of his noblest and most effective illustrations along the by-paths of botany; and so with other Bible writers. "Consider the lilies of the field." "I am the vine," etc.

To merchants botany comes in and makes up a part of a liberal education. It brings the mind in contact with nature's beauties, affording a theme for pure and refreshing thought and conversation in hours away from business. It leads the mind from a relish for mere worldliness, greed of gain, and from the gilded forms of corrupting pleasures and false in beauty, up, to a higher, more spiritual and exalted taste—to a love for the truly beautiful—the beauties of nature—and of nature's God. And it affords, besides, a pleasant recreation. Frost—a great botanist—was once a poor and sickly shoemaker. His physician recommended botany; and his excursions to the country and woods in search of flowers, not only led to health, but to note as a botanist.

While these remarks apply to all, botany, for the farmer, florist and gardener, has a special value. Their daily toil is the art, but botany is the science underlying it. Every rule of the art is a principle or fact of the science. Science suggests conditions and art merely devises methods for meeting them. A rule of art may be practiced in ignorance from custom, but the above statements are nevertheless true; and who can say we do not a thing better by understanding the "wherefore" or the reasons?

Were an acquaintance with botany more common among farmers, better success would attend the sowing of seed, and better fruits and crops would reward their tillage. The value of drained land would be better understood, and there would be more of it. Whence came all of our improved fruits? They are the outgrowth of a simple fact of vegetable physiology pertaining to the sexes of flowers. Of course cultivation has had its influence, but the more rapid progress has issued from "crossing," and so it will in the future. The fact has opened a new field for science and for the triumph of man, from which the farmer reaps greatly of the benefits. Should he not study and assist in the work?

As to the florist and gardener, whether professional or amateur, the shortest guide to mastery and success in either's field is the study of botany. For botany impresses the fact that plants are living things. Do they not grow better if we remember this in our care for them? Botany tells how they grow. If we comprehend the conditions of growth are we not better able to meet them? Botany tells of what climate plants are natives and whether their home be in the forest, marsh or mountain side; or in the desert, air; or whether parasites; consequently whispers how to manage them when we take them into our care; for immediately we know it is of no use to plant the water-loving Nymphea in a dry soil, or the leathery agave in the pond, the aerial orchid in the common soil, or attempt to compel the wicked parasite to make its own living.

The science also treats of and investigates the myriad smaller parasites before alluded to as sources of animal and plant disease—fungi and bacteria—and suggests more intelligent methods of keeping them at bay.

And lastly, if the principles of hybridization are of use to the farmer or fruit-grower, they are of equal advantage to the florist and gardener in the improvement of flowers and vegetables.

But these men are realizing this. Ignorant gardeners and florists are passing out of date, and to-day the most successful men of these classes all over the land are intelligent botanists.

By what I have said I do not mean to imply that every one can, or is to become a Linnaeus, Asa Gray, Strasburger, Pasteur. But every one, by a few leisure hours devoted to reading such books as Dr. Gray's "How Plants Grow," Lach's Text Book of Botany; or, among more recent works, Vine's, and Bessey's books on plant life, and these, supplemented by observation and the personal examination of typical flowers, such as are to be found in abundance everywhere during summer, may easily obtain a knowledge sufficient to be of great value and lead him, perhaps, further into a delightful field that is as broad as the realm of vegetation. *New Albany, Ind., April 8, 1887.*

[This excellent paper of Mr. Walker's will suggest the value of learning, should there still be anyone left who doubts it. Sometimes we think no one seriously questions it. The one who asks, What good is there in learning? is simply offering an excuse for laziness. The farmer or fruit-grower who would ask, What use is botany or any study? will gossip away hours on a barrel in a store over the most frivolous nonsense; and even should the questioner be a person of more intellectual pretensions, the same question of what good? could be asked of the half he does in life.

That those who object scarcely mean what they say is evident to an editor or other prominent educators.

The following is a letter on the table to-day with Mr. Walker's letter. They come by the hundred during the year, and almost always from people who have laughed at botany or other sciences. The time always comes when they are only too glad to profit by the study they have laughed at:

"At the suggestion of my friend, of this city, I send you a sample of grass, and request you to give me the name of it—the popular name as well as the botanical one. If you know where the grass originated, please say. I can find no one to answer me these questions, and I will be obliged for a reply. I enclose a postal card."

And here is another:

"We enclose a small branch of a tree. Please tell us the name of it and oblige."—Ed. G. M.]

A NEW APPLE PEST—THE APPLE-LEAF FLEA-BEETLE (HALTICA PUNCTIPENNIS LECONTE).

BY PROF. C. V. RILEY.

As long ago as 1872 I found the larva of a little flea-beetle known as Haltica punctipennis in Missouri, feeding upon Hawthorn. In 1877 I found it again in Colorado, but the species has never been considered injurious until the present year. This spring, however, it has appeared in great numbers in the vicinity of Dallas, Tex., and of Gainesville, Tex. Mr. J. R. Johnson, of Dallas, writes that they appeared in great numbers about the first week in May, and that within two or three days thereafter they had destroyed his entire lot of apple and pear grafts. They then removed to his one and two year old apple trees. Mr. Johnson had never been troubled with them before, although he remembers to have seen them in limited numbers in 1883 upon his young apples.

The habits and general appearance of this new apple pest are quite similar to those of the grape-vine flea-beetle H. chalybea. The larva is rather slender, dark yellow-brown in color, with darker head and prothoracic shield, and each segment bears four transverse dorsal warts. The legs are black, and project out at the sides of the thorax.

The adult beetle is shining green rather than steel blue, and is distinguished from the grape-vine flea-beetle by its smaller size and the numerous impressed dots on the thorax and wing covers.

This insect, although exciting considerable alarm, will easily be subdued by arsenical poisons, the use of which is well understood in Texas. Mr. Johnson has already applied Paris Green in its dry form with good results.

EDITORIAL NOTES.

HYBRID BLACKBERRIES.—The Editor of the *Rural New Yorker* has succeeded in raising seedling plants of raspberries crossed with the blackberry. They will fruit in a couple of years.

CORTICAL PECULIARITIES IN THE PLUM.—Some specimens of supposed hybrids between the peach and the plum were sent to the Academy for examination. The chief reasons for the belief that they were hybrids were that they were sterile, and seemed in leaf and branches intermediate between the two species. Mr. Meehan observed that in hybrids between acknowledged species, it did not follow that the characters should be intermediate. Often there would be scarcely any trace of the action of the male parent, while at other times the male would seem to have had a leading influence. But these plum branches showed no trace of any intermediate characters, but were purely plum branches, with no trace of the peach character about them.

He said he had called the attention of the Academy on several occasions in the past to the fact that the bark of trees did not crack from the mechanical pressure of wood-growth, as so often taught in botanical text-books; but the rifts arose from the peculiar growth of cork cells, and it was the character and general direction of these growths, apparently different in species, that gave the varied characters to tree bark—characters that were more or less constant in each species of tree. A tree could in fact be nearly as well known by its bark as by its fruit. The development of the cork cells destroyed the cuticle In the cherry and birch the chief development was in a lateral direction, and hence we could easily strip sections from around branches. In the Abele poplar the development destroyed the bark to a considerable depth, and in a quadrangular form. These gradually met at the points and at once formed deep furrows up and down the stem. In the plane and some other trees, the cork cells worked up and down under thick layers of bark which it threw off in flakes. But the chief distinction was in the period of life when they assumed activity. In the chestnut (Castanea) it was nearly twenty-five years before they grew into destructive agencies, and hence there was smooth bark to the chestnut for nearly a quarter of a century. In the oak rough bark from the development of the cork cells, began at about ten years; in the sassafras at five years; in some they started at one, and accasionally the same season. In the beech they grew the first season, and only worked under the outer cuticle, which they threw off as fine film annually. Handling a branch of beech at some seasons, a filmy deposit would be left in the hands, which was the fine silky bark of the beech. Hence the beech had never rough bark. This fact should show mechanical action has no part in rifting the bark. Mechanical action should split a beech as well as any other tree.

Returning to the plum, he remarked that the development of the cork-cells were in many respects the same as in the beech. They started on their destructive errand before the annual growth was fairly over, destroying the thin outer cuticle as it progressed. It was this that gave the silvery tint to plum-wood, with which all must be familiar. This was never seen on peach-wood. This character was exhibited on all the samples of supposed hybrids sent. There was nothing whatever to distinguish them from pure plums so far as this character was concerned.

As for the flowers, the plants were sterile because of peculiar abortion in the reproductive organs. The carpels instead of being consolidated, ending in a single style as in the ordinary plum, had become distinct, and there were ten processes difficult to say whether they resembled stamens or pistils most. There were no attempts to form perfect stamens or petals, but the bud scales had a faint rosy margin as if there existed a slight disposition to make petals out of them. They were remarkable examples of monstrosity in plum flowers, but nothing to indicate any action of the peach therein. They were evidently sterile because they were monstrous, and not that they were hybrids. The foliage had a more peachy look than customary with plums, so far as mere outline was concerned, but it is well known that when there was a disturbance of sexual characters, the whole system of growth was apt to be disturbed. It was possible the plum and the peach would hybridize. It would be of much interest to science could the possibility be proved a fact. It was due to science to say these specimens did not prove it. The chief interest in the specimens, he thought, dwelt in the fact that amidst all the changes in characters brought about by some abnormal agency, the cortical peculiarities, as influenced by the cork-cells, remained the same.—*Proceedings of Academy of Natural Sciences of Phila.*

SCRAPS AND QUERIES.

Bees Slitting the Flowers of Petunias.—"F." This is now well known. It was the subject of a paper printed in the proceedings of the Troy Meeting of the American Association many years ago—and the fact that humble bees always do this to any tubular flower they wish to rifle, is generally known now. They don't care one dip of honey for arrangements for cross fertilization—and it has always been a matter of surprise to the writer that so acute an observer as Mr. Darwin should have published what he did about the necessity of bees fertilizing red clover, when, if he had looked more closely, he would have seen that the humble bee does not trouble himself about the floral machinery at all but slits the tube of the clover as you describe in the petunia, and gets the honey from the outside. At least this is the way the Yankee humble bee does, and he may be cuter than his English cousin.

A Fine Herbarium.—One of the best private herbariums in America is owned by Mr. P. V. LeRoy of Peekskill, West Chester Co., N. Y. It has about 25,000 to 30,000 species, though this includes many of the lower orders of vegetation, such as mosses and lichens. There are about 9,000 species of North American plants—the others are from Brazil, Chili, East Indies, China, Japan, Russia and other parts of Europe. These have all been correctly named by competent authorities. Medicinal plants have a prominent place in the collection. Mr. LeRoy may possibly move from Peekskill, and friends are wondering what he will do with these botanical treasures.

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

THE LILY OF THE VALLEY.

BY C. H. S.

Flowers large and flowers showy,
Brighten up the umbrageous dale,
But modest sweetness marks the snowy,
Bell-like, Lily of the Vale.

Fragrance, in its fairy lightness,
Every nook and corner finds,
Envying not the other's brightness,
Envy! rust of meaner minds.

Sweet lady! Lily! how like thee
Would I through life's wood humbly wend!
The cup of fragrance, blest in me,
Should cheer the lip of foe and friend.

My cup, my lot, with men to share,
In busy shop, or marts of trade.
The bitter dregs of toilsome care
Are absent in the forest's glade.

Sweet lady! Lily of the Vale!
Enwafting sweets on friend and foe,
I'll wander on and tell the tale,
And sow the seeds that thou would'st sow.

The fragrance I may cast around
Will little good, as thine, avail,
Still would I share the holy ground
That loves the Lily of the Vale.

Sterling, Illinois.

[The measure of these verses is imperfect; as a specimen of poetical structure it is not above criticism. We have altered it a little here and there, and pass it for publication on account of the good sentiment it expresses.—Ed. G. M.]

EDITORIAL NOTES.

The Rudbeckia or Golden Daisy.—

"Disk of bronze and ray of gold
Glimmering through the meadow grasses
Burn less proudly! for behold
Down the field my princess passes.
Hardly should I hold you fair,
Golden, gay midsummer daisies,
But for her, the maiden rare,
Who, amid your starry mazes,
Makes you splendid with her praises."
—*Lucy Larcom.*

Railroad Accommodations to Conventions.—It has always seemed to us in making concessions to large bodies holding meetings, railroad companies arrange things so as to prevent as many as possible from taking any advantage. Rarely half who attend can ever make use of concessions. The pretense, however, brings votes of thanks and advertises the roads. The railroad certificates for the Nurserymen's Convention reached their post-offices on the morning the convention opened.

The Pleasures of a Garden.—A New York correspondent writes: "Just now I am having an interesting time with roses and strawberries. Have several acres of the latter and am testing some twenty varieties, and may send you something on them soon. I am also getting a great deal of pleasure from my vinery of foreign grapes. Have a lean-to 112 feet long—a portion erected this spring; some a year ago, and the first two years ago. Have twenty-seven vines—seventeen different varieties. My friends say that the prospect for some ten-inch bunches is good this year on the two-year vines. Peach trees are all loaded through Central New York this year. I have been thinning out for the past week, taking out about two-thirds."

Over-statements.—The following from *Vick's Magazine* deserves wide-spread consideration. It is not only in connection with flowers; the whole range of gardening suffers from these exaggerations:

"When the writer in the *Mail and Exprese* says that an Orchid wedding bunch is not made up for less than $50, and drawing-rooms are decorated from $500 up, she simply doubles prices at which New York florists are glad to furnish flowers, and damages business. The cheaper flowers are, within a certain limit, the more people buy them, and buy them at a profit to the grower. What merchant would thank a reporter for mentioning his goods at double their selling prices? The interesting French story, widely copied in our papers, of a poultry farm kept by a lady, near Paris, which yielded fabulous returns, and was kept on the most ambitious scale, was lately inquired into by admiring English readers, and the author confessed the whole thing a fabrication. There never was such a farm or lady, although illustrations of her wire nettings and beautiful poultry houses accompanied the sketch. The whole thing was drawn from fancy. I saw, lately, an elaborate poultry establishment, with incubator, steam boiler, etc., which had been fitted up several years, and but just began to pay a profit."

In a Philadelphia paper of very high character, referring to some very fine strawberries raised by Mr. Wm. M. Singerly, proprietor of the *Public Record*, in his forcing houses during the past winter, the statement was made that the cost of raising them was about a dollar per berry. So far as Mr. Singerly is concerned, who loves to raise these in order to give to sick friends or add to the joy of festive occasions, he would not probably care if they did cost as represented; but it is a great injury to the cause of fruit forcing to present the matter in these extraordinary shapes.

Horticulture in Japan.—The Empire of Japan is becoming greatly interested in improving the horticulture of the empire, and the Minister of Commerce has commissioned Mr. Hida as his representative, who is now in our country, to visit all the leading specimens of good gardening and report what he finds.

Horticulture in British Columbia.—This section will become a paradise of gardening. It is one of the most prosperous sections on the Pacific. There are already many good firms at Victoria, and the other settlements are following. Mr. G. W. Henry has a successful place at Port Hammond.

Insuring Greenhouses.—"C. H. S.," Philadelphia, Pa., writes: "Can you inform us where we can find an association that will insure florists' hot-houses By giving us immediate information you will greatly oblige."

There is no such association. Horticulturists seldom care to insure against fire, as any intelligent forethought is security enough. The only serious enemy is hail stones, against which there is no one to insure. Last year the florists commenced a movement for mutual insurance against hail. The company is ready to issue policies. Inquire of Secretary Jno. G. Esler, Saddle River, N. J.

Professor Asa Gray.—It will gratify the numerous friends of this great botanist to learn that wherever he goes in the Old World he is received with the greatest respect and in many cases with enthusiasm. His visit to the Old World at this advanced period of his life, is to study some points in connection with the forthcoming volume of his synoptical Flora.

Wm. F. Dreer.—On the death of his father Mr. H. A. Dreer, W. F. then little more than a lad, assumed the control of the business, retaining and honorably sustaining his father's name. He will, we are sure, receive the congratulations of world-wide friends, on his marriage with the daughter of Dr. Ed. H. Williams, an esteemed citizen of Philadelphia, which event occurred on the 22d of June.

Mr. John Rock.—This eminent pioneer in the nursery business in California, left New York on the 18th of June, for a short visit to his old home, Frankfort-on-the-Main, in Germany. Few men have done more to popularize fruit culture and gardening generally on the Pacific coast, and his numerous friends will wish him a good voyage, and pleasant memories on his return.

Ellwanger & Barry.—Both of these gentlemen, founders and heads of the famous Rochester firm, are summering in Europe.

Lonsdale & Burton.—This famous firm of rose growers, located at Wyndmoor, near Philadelphia, will be dissolved on July 1st. Mr. John Burton will retain the old establishment. On the new grounds of Mr. Lonsdale, arrangements have been made to erect at once three rose houses, each 250 feet long. They will be warmed by steam.

Isaac Collins.—Mr. Collins, whose small but excellent nursery, at Haywards, is well known to Californians, has sold his grounds. A high figure was the temptation.

Peter Henderson & Co.—Mr. James Reid has retired from the firm, which will hereafter consist of Peter Henderson, and his two sons, Alfred and Charles.

T. V. Munson.—A Texas correspondent pays a just compliment to the services of this gentleman in the advancement of intelligent horticulture South. He says one of the greatest treats in his recollections of life, was a ramble through the woods and fields with him. Everything seemed to interest him, and he seemed to know something about everything they met. His general intelligence was charming.

The T. S. Hubbard Company.—The well known and popular firm of T. S. Hubbard, grape growers, has been made a stock affair. Mr. G. H. Pratt, formerly of Rochester, takes an interest, and the former employees, Messrs. Young, Hart and Lee, have now an interest in the company, at Fredonia, N. Y.

The Canadian Fruit King.—This title is conceded by his friends to properly belong to Alexander McDonald Allan, of Goderich, Ontario. He is president of the Ontario Fruit Growers' Association, and the largest exporter of Canadian fruit.

Col. Geo. Briggs.—Every one has heard of the famous Briggs orchard, the pioneer peach orchard of California, founded by the Briggs Brothers, near Marysville. They also originated the Briggs Early May, a popular variety on the Pacific. The last of the brothers died recently, and we believe there is no one of the family left to bear the name.

George Jackman.—The many over the whole world who have enjoyed the pleasures the numerous beautiful hybrid Clematises give, and especially the very striking Clematis Jackmani, will be sorry to learn that the one who started this rare enjoyment for them, Mr. George Jackman, died at his residence, Woking, near London, on the 29th of May, in his fiftieth year, from congestion of the lungs. He leaves a wife and eleven children.

General Samuel Alexievitch Grieg.—This gentleman, after whom the very beautiful species of Tulip, Tulipa Griegii was named, died recently. He was a famous amateur horticulturist and President of the Imperial Horticultural Society of Russia. The following, from a recent issue of the *Gardener's Chronicle*, gives an idea of the beautiful flower with which this gentleman's name is so honorably connected:

> "Tulipa Griegii is a wonder among Tulips; it is by far the largest and most striking of any of the species, the flowers looking like great flames rising out of the pretty mottled leaves. It seems to like rather a dry situation where it can get plenty of sun."

Dr. W. H. Schmœle.—The death of this gentleman, the founder of Egg Harbor City, is announced. He died in Philadelphia in his seventy-sixth year. He was a native of Westphalia, and had a great fondness for establishing German settlements. The one at Egg Harbor, New Jersey, was founded especially in the interests of grape growing, for which its soil and climate were thought to be eminently adapted. Many of its pioneers came from Cincinnati. It has fully proved the wisdom of its founder's thoughts, as it is one of the most successful of grape growing settlements.

Dr. Kellogg.—Dr. Albert Kellogg may be said to be the first resident botanist of the Pacific slope to make much of a mark in the study of the flora of that region. A very large number were first described and named by him. A number of species bear his name, and one genus allied to the Galium, named Kelloggia in his honor. His ability to distinguish new species from those already described was remarkable, considering how limited must have been his herbarium for comparison, and the scant supply of botanical literature at his command. It is not wonderful that many of his new species proved old ones—it is the more wonderful that so many proved distinct. He died at Alameda, California, on the 31st of March, in the seventy-fourth year of his age, continuing to the last to work on the herbarium of the Californian academy.

DeCandolle.—Prof. Alphonse DeCandolle is so well known to our readers by the eminent services he has rendered by his botanical knowledge to horticulture, that there will be universal sympathy with him in the loss of Mrs. DeCandolle, who died in Geneva on April 6th, in her 76th year.

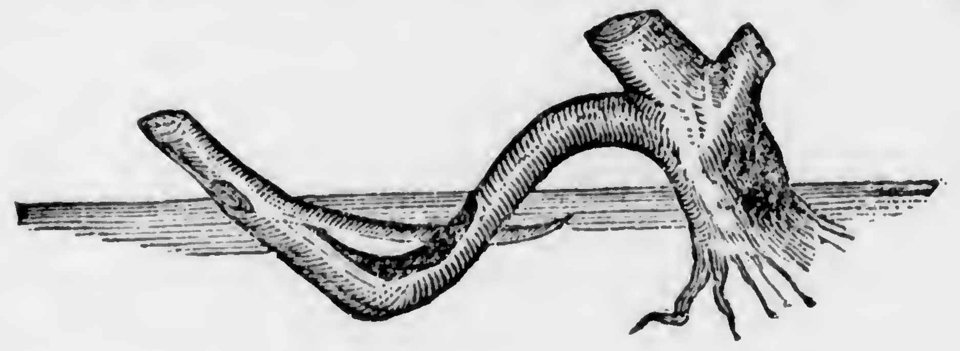
The Latest Studies on Indian Reservations.—By J. B. Harrison, Philadelphia. Published by the Indian Rights Association. This is one of the most common sense treatises on the Indian question we have ever read. The trouble with the Indian began by doing wrong for the sake of peace. But wrong when once sown, only produces wrong, and a crop of peace can never come from it. When the white man came to America, at least to Pennsylvania, he pretended to believe the Indians owned it, and made a mockery of buying it from them. But no man owns the ground by any natural right. His right comes from the consent of society, and society gives him that right only so long as he makes it productive, either in adding to the supplies for human wants, or by taxation. The Indian never did anything to make the land more valuable, and the mere running over it could no more make him an owner than that running over of by deers or rabbits made the land belong to them. Yet to this day the farce of buying land of the Indian has been continued, and we have suffered for the error.

In reading this book of Mr. Harrison, it is evident that law and reason must go together in the settlement of the Indian question. He shows what a vast amount of good the missionaries accomplished, and yet he admits that the hanging of thirty bad Indians did more for civilization in Minnesota than the preaching of thirty years. He shows, too, the great advantage which follows the forcing of the Indian to go to work and make the land more valuable, as a condition of his owning it. Immense good has followed this practice. In some cases after they had seemed to have become as good and as earnest cultivators as the white man, they were left to themselves. But when force was removed, they soon got back to lazy and shiftless habits.

On the whole this is an admirable book and we cordially recommend it to those interested in the Indian question.

The Propagation of Plants.—By A. S. Fuller. New York: Orange Judd Company. 1887. We look on this as one of the most original and in many respects the best of Mr. Fuller's very useful works. It is dedicated to Mr. Trumpy, who, in connection with the Parsons Nurseries at Flushing, has earned the reputation of being one of the most successful propagators in the United States. Mr. Fuller discusses the question in its broadest aspects. He gives some account of the cell structure of plants, and the formation of different organs, which introduces the reader gracefully to the subject of fertilization and propagation of plants by seeds. Then we have propagation by cuttings, layers, suckers, root cuttings, and budding and grafting. And there is a select list of plants that require special modes of propagation.

In his preface Mr. Fuller has a hit at the secrets of some professional propagators, and takes credit for exposing these secrets. If Mr. Fuller is giving away these secrets for nothing, he expects to make money by the sale of his book. If, after preparing this book for the press, some one should have published just such a one, rendering all his labor on his manuscripts worthless, he would not have been in the very best of humor with his misfortune. Had he known that such a book was in contemplation, we fancy he would have kept his own secret, hurried along with his task, and got out his own first if possible. We do not know why a propagator's secret should be any more contemptible than the secret of an author. We have always maintained that the raiser of a new fruit or flower, or the discoverer of anything in horticulture, is just as well entitled to profit from such invention as the discoverers in any other profession. Unfortunately his materials are of such a nature that his discoveries cannot be patented, as the more mechanical discoveries can, and the only way he can get recompense for his time and trouble is by some measure of secrecy as to his important discoveries until he has had time to reimburse himself for his efforts in discovering them. If he has a nursery he keeps his secret and sells the product; if he has no nursery he writes a book and sells the secret. Where is the difference? It is true there are a large number of horticulturists who give away freely their secrets, and tell all they know. All this is commendable; but we hardly think it justifiable to hold up those who think proper to keep at least a little for themselves. As to Mr. Fuller's work we are free to admit that it exposes admirable secrets. It is one of the best works of this kind we have ever read, and, though Mr. Fuller is not "giving them away for nothing," the price the reader will



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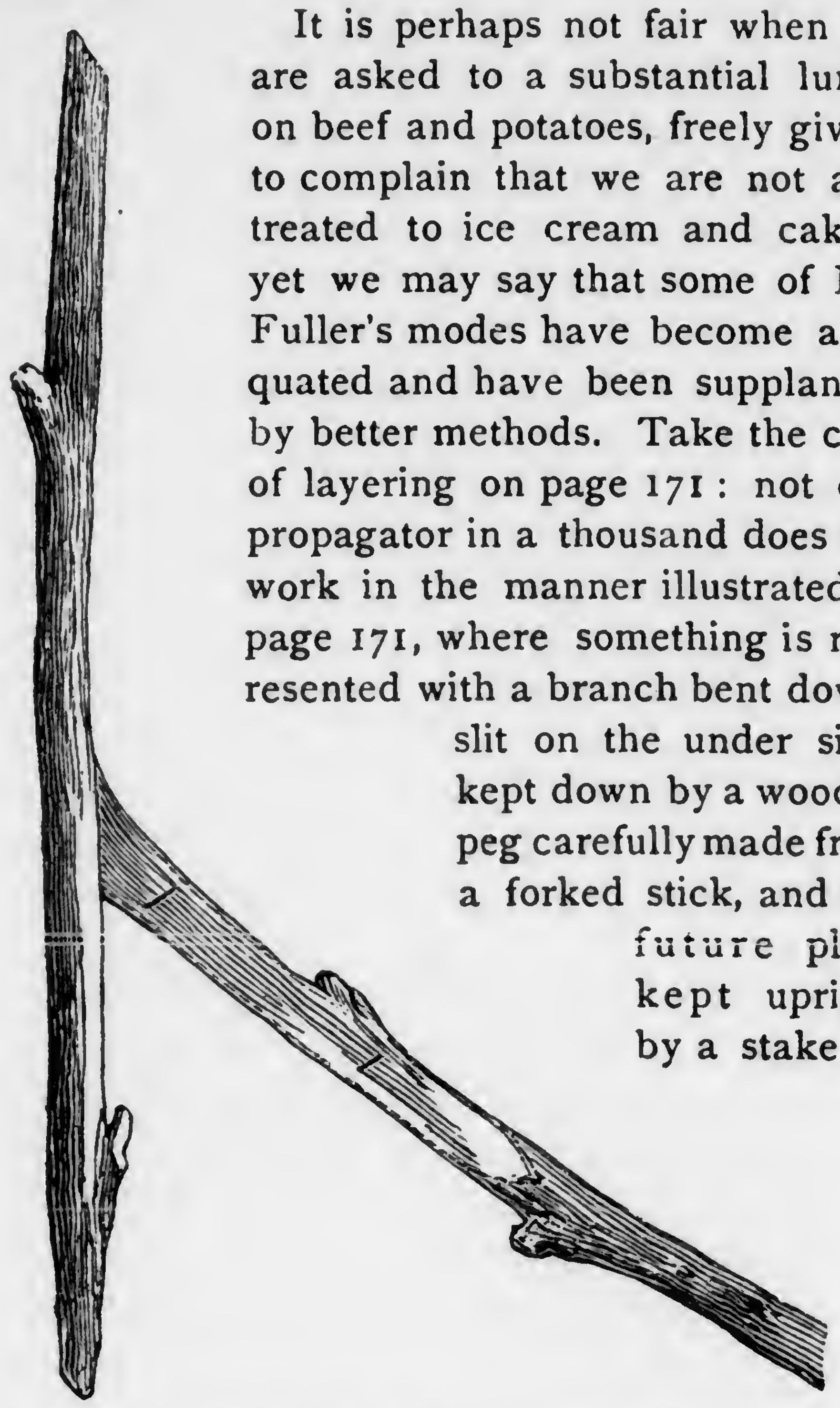


It is perhaps not fair when we are asked to a substantial lunch on beef and potatoes, freely given, to complain that we are not also treated to ice cream and cakes; yet we may say that some of Mr. Fuller's modes have become antiquated and have been supplanted by better methods. Take the case of layering on page 171: not one propagator in a thousand does the work in the manner illustrated at page 171, where something is represented with a branch bent down, slit on the under side, kept down by a wooden peg carefully made from a forked stick, and the future plant kept upright by a stake to which it is carefully tied. These sort of layers break in bending, and the labor is "positively awful" because wholly unnecessary.

The slit is now made, as in the cut (see p. 221), on the upper portion so that the branch can be thrust into the ground and rammed in as tight as you like with no peg or danger of breaking, and the branch will stay upright of its own accord without all the staking and extra labor. We give also an illustration of side-slit grafting, known in the "trade" as Chitty's method, which also has the advantage of not easily breaking when thrust into the ground.

American Seed Trade Association.—The fifth annual meeting was held in Philadelphia, on the 14th and 15th of June, and was called to order by President Fotler of Boston. James J. H. Gregory, of Marblehead, Mass., delivered an address on "Experimental Stations" and proposed a uniform method of testing, to place all parties on a like basis. A committee of which he is chairman was appointed to carry out the resolution. C. L. Allen, Garden City, L. I., read a paper on "Selections." At this moment we had to break off to go to press.

Catalogues.—Bull, William, Rare Plants and Orchids, Chelsea, London, Eng.; Jewett Nurseries, Fruit, Ornamental, Small Fruits, etc., The Dalles, Oregon; Joosten, C. H., Wholesale Dutch Bulbs, Azaleas and Camellias, New York City; Van Waveren, M., & Sons, Dutch Bulbs, Hillegom, Haarlem, Holland; Van Waveren, P., & Co., Dutch Bulbs, Hillegom, Haarlem, Holland; Veitch, James & Sons, Plants and Novelties, 1887, London, England.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

Personal Exhibitions.—The leading florists are making personal exhibitions that are equalling in beauty and interest those given by associations. Siebrecht's Orchid Exhibition in New York in the spring, drew "all the beauty and fashion" of the great city to view it. B. A. Elliott in like manner astonished the Pittsburgers in the last week of May by a Rhododendron exhibit, which reminded the spectators of the great Centennial sights These attractions educate and do good.

The American Association for the Advancement of Science.—This excellent organization meets this year in New York city, on August 10th, continuing for a full week. The botanical section has become one of the leading attractions, and draws attendance from all parts of the Union.

The Annual Meeting of the American Nurserymen's Association.—The twelfth meeting of this body was held in Chicago on the 15th and 16th of June. Many of the older members were absent, but a large proportion of new ones swelled the attendance to probably 300. The Chicago newspapers took little note of the meeting, but the intercourse of the members individually proved valuable and instructive. Usually a large quantity of sales are made with each other, but buyers are reported "cautious" on this occasion; a fair but not over large quantity of stock was reported from most quarters. Watrous, Scott and Willard were the leading workers who did much for the success of the meeting. Watrous as President, and all the old officers were re-elected, and Detroit fixed on as the place for next meeting.

The readers of the papers, as is so often the case at these meetings, could scarcely be heard, and the fault, as is so often the excuse, placed on the "acoustic properties of the building." Albaugh who read Parson's paper on "Landscape Gardening," gave the listeners pleasure, as did also Douglass, who read his own paper on "Profitable Forestry," every word of which was clear and plain. The members regarded this essay as one of the best features of the proceedings.

American Pomological Society.—This was organized 1848, and is now about to hold its twenty-first session. Mr. P. Barry, First Vice-President, announces that at the last session of the American Pomological Society, held in the city of Grand Rapids, Michigan, September 8–11, 1885, the Massachusetts Horticultural Society, through its President, presented an invitation to hold the next biennial session at Boston. This was also the strongly expressed wish of President Wilder, who desired to meet the Society once more in his own city. The invitation was accepted, and, therefore, the next session will be held in the city of Boston, commencing on Wednesday, September 14th, 1887, at 10 o'clock A. M., and continuing three days.

The session will be held in one of the rooms of the Massachusetts Charitable Mechanics' Association Building, and the exhibition of fruits will be held in conjunction with the Massachusetts Horticultural Society's annual exhibition in the great hall of the same building. All horticultural, pomological, agricultural and other kindred associations in the United States and British provinces are invited to send delegates, and all persons interested in the cultivation of fruits are cordially invited to attend.

The society will not have the hoped-for pleasure of meeting its beloved president, who was stricken down by death, full of years and honor, just as he had commenced to prepare for this meeting; but it is hoped and expected that in honor of his memory there will be an unusually large attendance of members and delegates from all parts of the country, and that the session will be one of the most interesting and useful ever held by the society. The sad emergency which has arisen from the death of President Wilder, who had so wisely and successfully guided the Society for so long a period—indeed, it may be said, through its entire progress—makes it incumbent on all its true friends to rally now to its support, that its good work may be carried forward without interruption.

During the thirty-eight years of its existence, the society has accomplished much in the interest of pomology and the fruit growing industry of our country. It has effected an organization, through its committees, in every State and Territory. In its biennial reports it has brought out the latest and best experience. It has made an important advance in the needful reform of pomological nomenclature, and has compiled a national catalogue consisting of nine hundred varieties of fruits adapted to the several States and Territories, with their varying climate and other conditions. Much is yet to be done, and with the experience acquired and facilities now enjoyed, the work of the future will be of greater value to the country than that of the past.

The Massachusetts Horticultural Society has, with its accustomed liberality, appropriated the sum of five hundred dollars, to be offered in special prizes for fruits to be exhibited at the meeting of the American Pomological Society in connection with the Annual Exhibition of the Massachusetts Horticultural Society during the pomological meeting. A list of these prizes will be found in their circular, and special attention is called to them.

Parties intending to exhibit should give timely notice to Mr. E. W. Wood, at Horticultural Hall, Boston, stating what prize they will compete for and the number of dishes they will exhibit, so that space may be reserved. Packages of fruits should be addressed to E. W. Wood, at the Massachusetts Charitable Mechanics' Association Building, Boston Mass., freight and express charges prepaid. Mr. Charles W. Garfield is secretary.

It is impossible at this early date to definitely announce a series of topics for papers and discussions, but already assurances have been received from a number of leading pomologists and scientists in the country of their willingness to aid in the exercises of the meeting; and we confidently expect to hear from Dr. J. A. Lintner, of New York, and Prof. S. A. Forbes, of Illinois, upon Insects Injurious to Fruits; Dr. Henry P. Walcott, of Massachusetts, upon the Sanitary Influence of Fruits; Dr. J. H. Brakeley, of New Jersey, upon American Cranberry Culture; John J. Thomas, of New York, upon Pomological Nomenclature; Hon. H. E. Van Deman, of Washington, D. C., upon the Identification of Fruits; J. M. Smith, of Wisconsin, upon Preventing Deterioration in Varieties of Small Fruits.

We shall hear from P. J. Berckmans, of Georgia, upon some topic to be chosen by himself; and the California Board of Horticulture will select some skillful pomologist of that State to treat the question of the comparative quality of the species of fruits grown on the Pacific Slope and the same species grown elsewhere. We hope also to hear from Prof. Wm. Saunders, of Canada, on Experimental Pomology in the Dominion.

The following subjects have been suggested for general discussion as time may be secured: 1, Discussion on New Fruits; 2, Migration of Fruits; 3, Honesty in Testimonials and Recommendations; 4, Hardiness of Fruits—Causes and Experience; 5, Behaviour of Fruits at Various Altitudes; 6, Commercial Fertilizers as affecting Quality; 7, Fruit Breeding and Seed Extinction; 8, Some of Our Most Promising Wild Fruits; 9, Testimony Concerning Peach Yellows; 10, Testimony Concerning Apple Scab; 11, Climate as Affecting Color in Fruits; 12, Possibilities of Small Fruits with Water; 13, Progress in Fruit Identification by Flowers; 14, Progress in Improved Nomenclature—Our Duty; 15, Relation of Forest Destruction to Fruit Deterioration; 16, Relation of Soil Starving to Fruit Deterioration.

The opening session will occur at 10 o'clock on the morning of Wednesday the 14th day of September, and unless otherwise ordered by the convention, the hours of convening will be 9 A. M., 3 P. M., and 7.30 P. M.

From the experience of the years it seems to the officers of the Society that any entertainment or excursion not directly germain to the work of the convention should be avoided, and that during the sessions, members should, as far as practicable, be in attendance. It is very desirable that fruit growers interested in the continuous progress of the Society work, contribute short notes upon the topics suggested by this scheme, to be employed in editing the transactions of the Society, even if the writers cannot be present at the convention; to this end, contributions are solicited.

GERMANTOWN (PHILA.) HORTICULTURAL SOCIETY.—The last of the spring meetings was held on the 9th of June. The hall was crowded by visitors among whom were many of the leading citizens of Germantown.

One of the most notable of the plants exhibited was a Begonia alba, that had been grafted on a Begonia rubra. It was exhibited by Mr. James Barrows. It was a cone-shaped specimen, about three feet by one and a half at the base, and was covered with flowers from bottom to top. Its floriferousness was attributed to being grafted on that stock.

Another plant very much admired was a plant of Polygala grandiflora, exhibited by Mrs. Thomas Meehan, which though a native of the Cape of Good Hope, the lady finds makes an excellent tub-plant for the lawn during our American summers. It was in a square, green painted tub about a foot over, had a straight stem about one foot high, and on this a head of about three feet over, having hundreds of its bright purple butterfly-like blossoms which are produced successively from May to September. The plant is kept in winter with the oranges and oleanders.

State Botanist, Prof. Thomas Meehan, gave his usual address on subjects suggested by the objects on exhibition. The strawberry, cactuses, purple-leaved plants, and vegetable parasites, formed the chief themes on this occasion.

THE MICHIGAN HORTICULTURAL SOCIETY.—The Grand Rapids *Daily Democrat* says that seventeen years ago was organized the Michigan State Horticultural Society, an association which has grown to be one of the most vigorous and useful of all the societies of the State devoted to advancement of special interests. It has come to be one of the most important of its kind in the country, and its annual volumes are recognized as pomological authority everywhere, and the good it has done in promoting fruit growing in Michigan is incalculable.

The early years of the society were days of small things. It kept the character of a local society for some time, but when T. T. Lyon, of South Haven, became president, in 1875, and was joined by C. W. Garfield, of Grand Rapids, as secretary, the following year, the society took on new energy and a new character. To Mr. Lyon the welfare of the society has been a first love, and he has given it a vast amount of unselfish and unrequited labor. He has been intelligently and industriously aided by Mr. Garfield, whose enthusiasm and genius in hard work have been most fortunately combined with the efforts of the venerable president. These two have been re-chosen year by year, and doubtless will be as long as they are willing to accept a modicum of honor with an excess of responsibility and labor.

A FRUIT EXHIBITION.—The fruit growers of Connecticut were treated to a grand free exhibition of strawberries, roses, cherries and other things, under the auspices of the State Board of Agriculture, at Bridgeport, Conn., on June 23. It is said to have been a very good educational affair.

PREMIUMS FOR SCOTCH THISTLES.—Councillor Lyon, Chairman of the Acting Directors of the Royal Horticultural Society of Aberdeen, has just received from Dr. F. Maitland Moir, Aberdeen, a beautiful silver cup, to be competed for at the summer exhibition of the Society, for the best Scotch Thistle. A strong and spiney competition is anticipated, says the *Gardeners' Chronicle*.

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

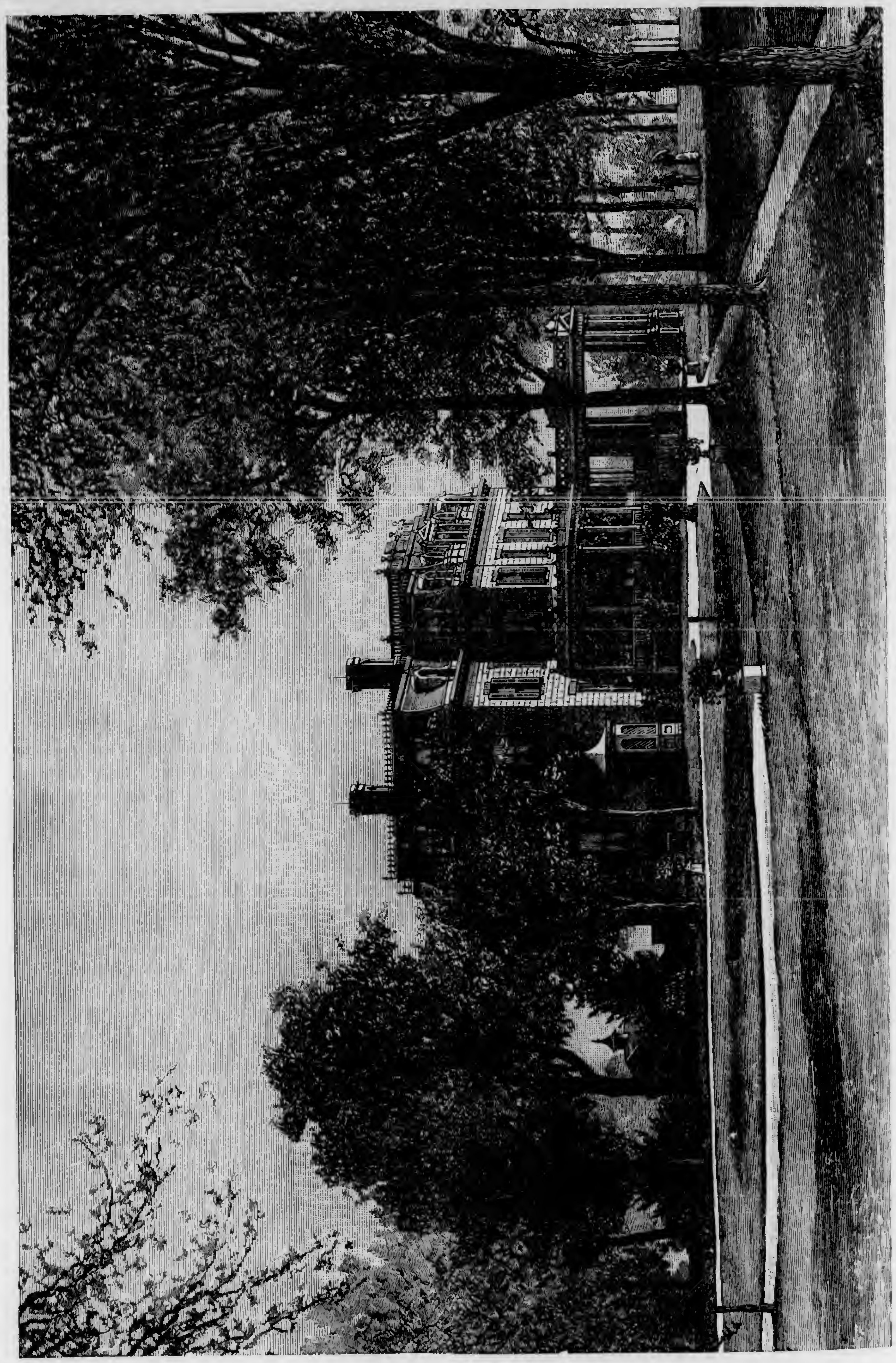
Edited by THOMAS MEEHAN.

VOLUME XXIX. AUGUST, 1887. NUMBER 344.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Some good poet essays to "thank the Lord for flowers;" but many a poor person of our large cities may thank the Lord for cemeteries, for without them hundreds would never own a flower. It has become a practice universal to plant flowers on the graves of those we have loved and lost, and hundreds in spring time may be seen with their few pots and baskets of plants wending their ways from the brick and mortar of the town to the little grave lots in rural cemeteries to plant flowers. Most of our cemeteries are now flower gardens, and many a lesson of rural art and rural taste has been first learned there. Sometimes these death-gardens are in the hand of tasteful lovers of the art, as at Spring Grove Cemetery, Cincinnati. Here the silent lectures attract students of the highest class from all over the world. The highest culture may still profit by a visit to Spring Grove. But even the humblest burial places often present lessons that it is profitable to learn. The writer was recently in one in which almost all the evergreens were of American Arbor-Vitæ. There must have been thousands of them planted everywhere. One would suppose that the effect of this exclusive use of a single evergreen would have given a monotonous effect to the whole scene. But it was not so. Variety was afforded by the monuments, the enclosures, and the flowers on the graves, and the effect of the Arbor-Vitæs everywhere was no more tiresome than the everlasting use of Smilax in cut flower work, or of grass for the sward of a lawn. Indeed, for the first time in our experience, it occurred to us that the upright, semi-artificial Arbor-Vitæ was in excellent keeping with the artificial monuments, making the graduation between the artificial and the natural true art so often hungers for, and that the effect was better for the employment of this one tree alone, than if an incongruous mixture to give variety had been used. In regard to architecture generally, not only will the effect be marred or aided by a consideration of the contour of the surface of the ground, as noted in our last, but by the character of the trees also. We give with this a view of the residence of C. P. Huntington, Esq., well known in railroad circles, at Throgg's Neck, which shows in a remarkable degree the good effect on the architecture of a number of straight boled trees. The numerous straight pillars of the porte cochere and of the verandahs, the square walls and square windows, are admirably supported by the upright trunks of these forest trees.



The Huntington Homestead, Throgg's Neck: Residence of C. P. Huntington.

COMMUNICATIONS.

THE AMPELOPSIS.

BY DENNIS KENNA.

How beautifully the Ampelopsis Veitchii colors under the autumn frosts. Three vines, growing to a silver maple in front of our door, have now (Nov. 2d, 1886,) leaves of dull crimson, rose, yellow, dark green with crimson edges, and many of them have not changed yet—like the tiny leaflets at the growing points, which still retain their natural light-green, almost yellow, hue.

The tree has a trunk of three and one-half feet in circumference, which is the uniform measurement, for twelve feet up to the head; the branches of which, being cut in close annually, do not shade the plants in the adjacent beds; but those in the bed encircling the base of the tree have to be watered regularly during the dry summer weather to keep them growing.

The roughened bark of this tree trunk is suited to the nature of the Ampelopsis, and the vines creep along in the furrows and over the scaly ridges, making leaves behind to cover its woody network.

A few vines which have been some years planted at the north side wall of St. George's Church in this village, have covered buttress for buttress with English Ivy, and the beautiful coloring of the leaves is made more pleasing by the long foot-stalks which allow a freedom of movement that under pressure of the winds makes a veritable moving mass of colors. And such colors! Like rosy fruits, beds of beautiful flowers, crimsoned skies, blended and touched up with the firmness and precision of artistic taste. What a pity it is so transient! Would we tire of it were it lasting?

This season I have tried growing this vine on smooth painted boards. I fastened the vines in place at first, but when they began to push out they took hold, and have outlined a straggling tracery on the inclosed stoop of our dwelling. The vines are robust but grow slowly. The exposure is southern and a stone walk is close by.

An Ampelopsis quinquefolia grows in our back yard on an old fence, which was once a boundary of some of the land under Prince's Nursery. The vine in its upward growth, after clearing the tops of the upright, weather-worn boards, had to droop, and vine following vine, and growing upon itself, a bulk of live wood has been accumulated, which, in the summer time, bears a great crop of leaves. Early in October we had a cool wave, which curled all these leaves up, showing more mildew to the square yard than I ever saw before. This was caused by the dryness of the soil resulting from the severe drought from which Long Island fall crops have only been relieved by the copious rains which have fallen since the 26th ultimo. *Flushing, L. I., N. Y., Nov. 2, 1886.*

IMPROVEMENT OF FLOWERS.

BY ERNEST WALKER.

Many of the "old songs" are the dearest to my ear and heart. Many of the new are not without their charms. But in these "old time" melodies there is often a strange sweetness, richness and rapturous harmony that thrills me to the soul—which, too often later composers fail to attain.

So it is somewhat similar with flowers and fruits. Among the host of new productions a few equal the old and some surpass them in certain respects.

But the existence of the latter can be but for a day — one predominant charm or quality will eventually slay the others and bury all. The qualities all must be equally developed; every feature must be preserved and developed. Complete culture; that is, attention to every attribute that goes to make a perfect flower or fruit, is as necessary in the improvement of flowers and fruits as mental, moral and physical education—all, should go to make up true culture in man. But too often this is not the case, one or the other of these natures is apt to be cultivated to the deterioration and death of the other, which, in time, only means the death of all; and the same is lamentably true in fruits and flowers. Geraniums especially we have been noticing. Queen of the West, Mad. Rompen and a few others are growing vigorously in the garden; but others, and by far the greater number of varieties planted there (among which are many new), are apparently of feeble constitution, and we note with regret that these all are those prolific, to me, of the finest flowers. Chas. Darwin is an example—one of the richest flowered geraniums ever attained, yet worthless on account of its sickly habit. In pursuit of a fine flower, and perhaps a purple geranium, its improver lost sight of vigor in the plant, which should be the first thing sought for, the other features afterwards; for vigor in the plant is the foundation of every charm and pleasure that the plant or the garden affords.

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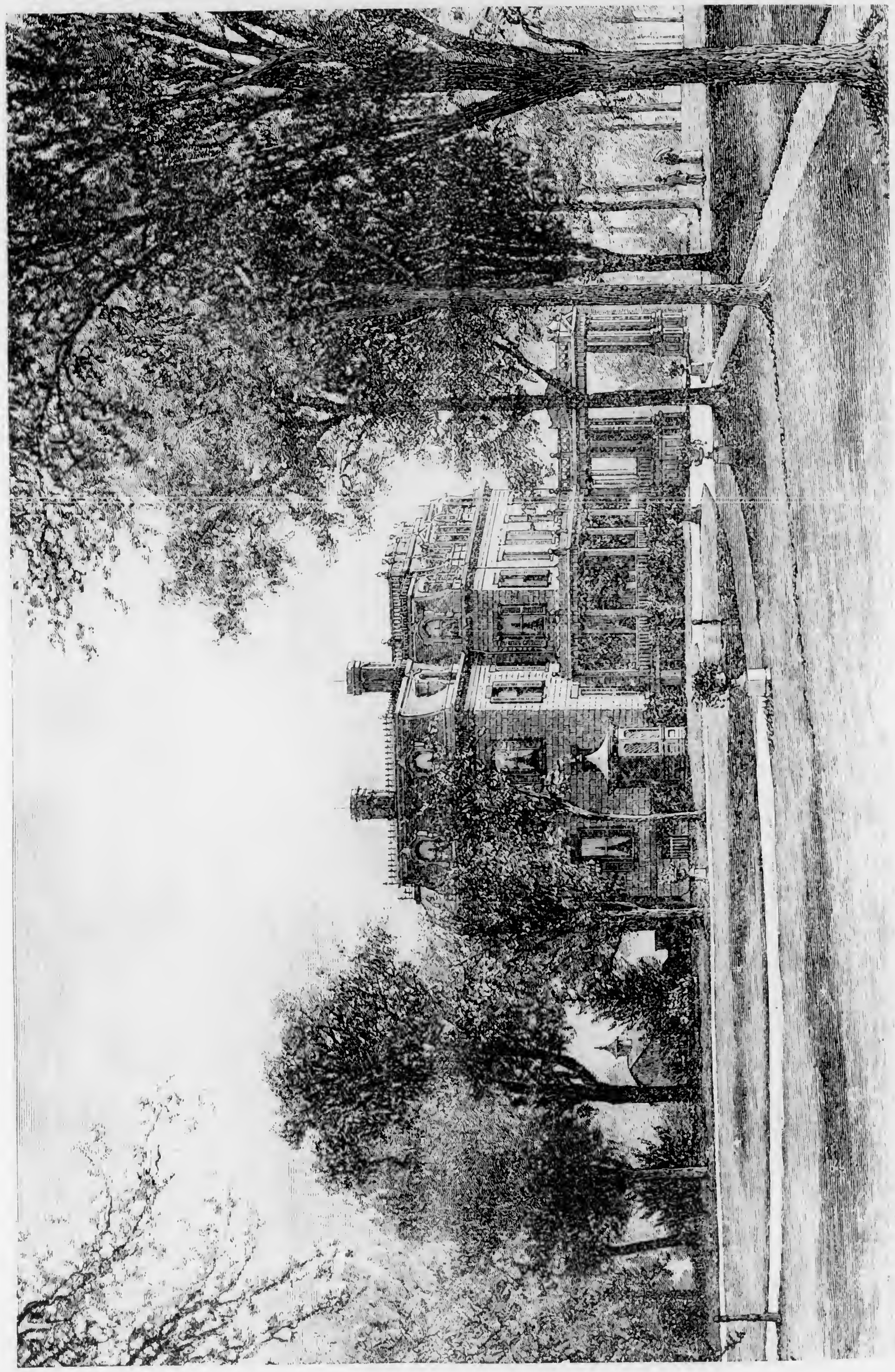

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INTENTIONAL SECOND EXPOSURE

aniums brought forward in the last few years. By this I mean those combining vigor, freedom of bloom, coloring and perfection of flowers. In connection with many such varieties Mr. Thorpe will long be remembered.

All are grand, were I to think merely of flowers. But however brilliant or beautiful the flower may be, or whatever shades we may attain, these cannot last long or afford much satisfaction if we have not the plant to produce them. Yet, while we gladly welcome all for the sake of getting the good, many of the late varieties seem to say this is the direction their improvement is taking. In other words, it is a transition of vigor, or a taking of vigor from one place and putting it in another—from the plant and pushing it into the flower. But this can never be a successful basis or method for permanent progress. The cultivation of one muscle will never make a strong man. Neither will the cultivation of the intellect—the flower of man's nobler nature—come to any good, unless his physical organization has received equal or its share of the cultivation. So it is with the plant, good culture consists in the equal development of every feature ordained necessary to the existence, each attribute is dependent on the other, and isolating any one in our efforts at improvement makes a hole at once for death to enter. All of nature's forces meet in equilibrium, and so do the forces of life in a plant.

In developing the possibilities of flower or fruit, the maintenance of this relation is the only basis of permanent improvement. But if any consideration is to be particularly kept in view, above all let it be vigor in the plant.

New Albany, Ind., Sept. 6, 1886.

GARDEN NOTES FROM SUMMERVILLE, S. C.

BY MRS. D. W.

The earthquakes which have desolated our country, followed by extraordinary drouths, emptying our wells, drying up ponds and streams, and parching our fields and gardens to powder, have, we trust, finally ended in copious rains. Our garden losses have been very heavy, even the large trees losing their foliage and looking crisped and brown. The Azaleas have nearly died out, only the commonest sorts surviving. The Camellias, too, have seriously deteriorated. Roses, though almost leafless, are generally less injured than other and hardier plants.

In your monthly for July I notice an inquiry respecting the Kalmia latifolia. Forty or fifty years ago, Kalmias grew among the Rhododendrons on my father's estate in England. They were profuse bloomers, and, as far as I can recollect, never suffered from severe cold. They were also forced for winter bloom; and I can perfectly remember the beautiful trees covered with blossoms in our parlors in midwinter, with lilacs, Bengal roses and Lilies of the Valley.

With regard to the note in your July number about the length of the racemes of the Wistaria—with us the bloom measures frequently half a yard, and the white variety is even more lengthy (though less full) than the blue. We have a plant of the white which has climbed to the top of a pine tree, over sixty feet, and is now branching out in all directions seeking further support. Both kinds seed profusely, the young plants becoming like weeds in the garden. The wild variety of our woods, Wistaria frutescens, blooms fully a month later than the Chinese.

The Bamboo Vine of our woods (Smilax) has proved with us a lovely climber. In winter its bright, glossy foliage is very fresh and cheerful. I think gardeners in the Northern States have not valued this most graceful native plant as it deserves. [This is probably Smilax laurifolia, and is truly a beautiful evergreen climber. It would no doubt prove hardy far north.—Ed.]

A friend has found growing around a pond in the middle of the forest a group of Stuartias. Both bloom and leaf are very showy and handsome.

I see that Gardenias are attracting some notice. They are easily grown here from cuttings taken in autumn, and we have fine plants of our own raising.

Some lilies we brought in from the woods several years ago have proved a success. In shape the blossom resembles Japan lilies—bright orange, with rich brown spots, very elegant, several blooms on each stem, which are six feet in height. When we found them the plants were about three feet high, and the flowers so much smaller we can scarcely realize they are the same plants.

Summerville, S. C.

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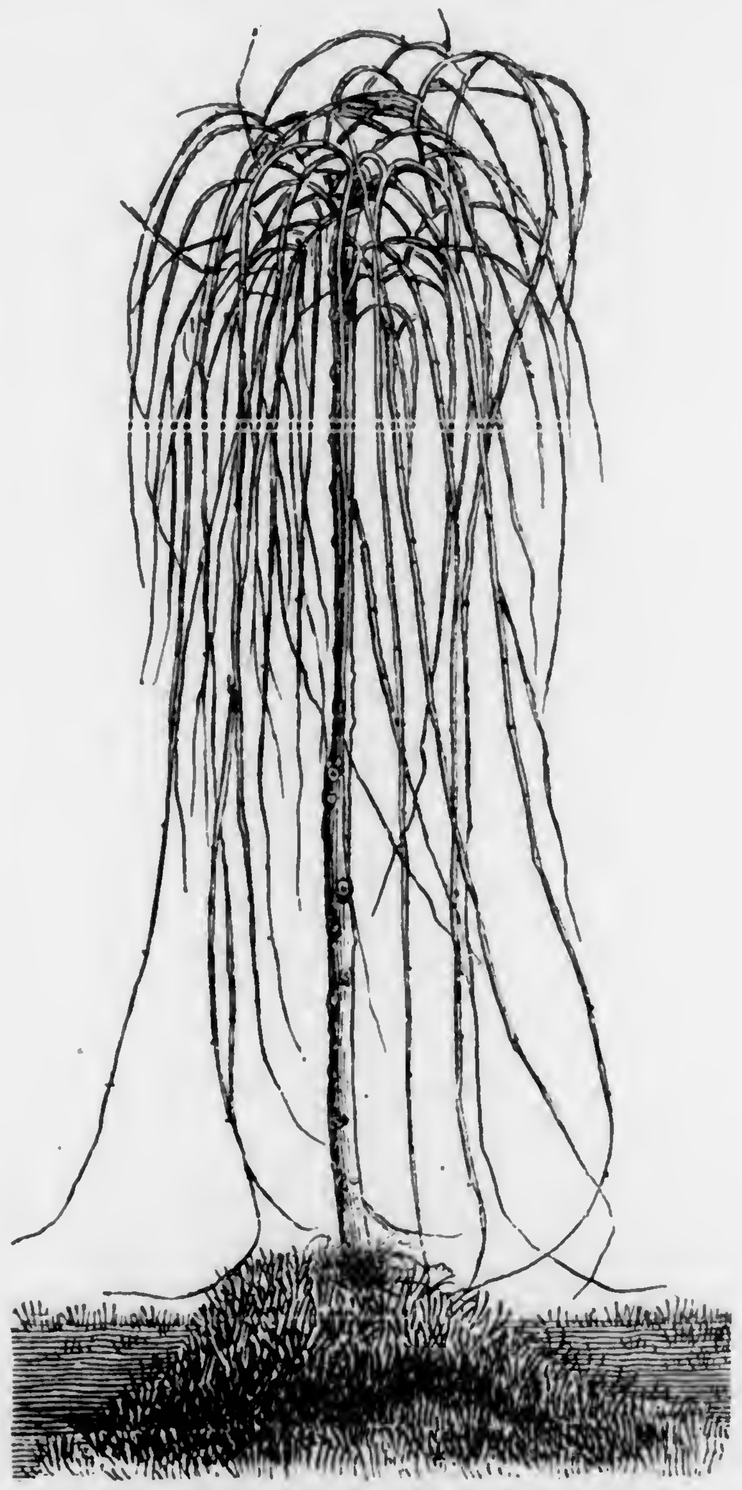
EDITORIAL NOTES.

A NEW WEEPING TREE, TEAS' WEEPING RUSSIAN MULBERRY.—In the year 1885, Mr. John C. Teas discovered among some Russian mulberry trees, one having a tendency of growth similar to a vine, running on the ground like a pumpkin vine, which attracted his attention. Being a practical nurseryman, he at once betook himself to budding some trees at standard height on some Russian mulberry, to test its weeping qualities. Some of the buds took so well that they grew to 2 or 3 inches that season. The following season the trees grew so rapidly that the limbs soon curved until in its downward tendency and growth it soon reached the ground. Every tree showing the same downward tendency. These qualities being ascertained, Mr. Teas next placed the propagation with the Messrs. James B. Wild & Bros., nurserymen, of Sarcoxie, Mo. At the twelfth annual meeting of the American Association of Nurserymen, Seedsmen and Florists, in June, 1887, at Chicago, by these gentlemen we were shown a one-year head, with branches touching the ground at 6 feet. Photos and stereo-views taken from specimen trees in nursery were shown, which attracted the attention of those desiring to see a new variety and type of weeping trees that would be much better suited to a diversified climate. The leaves of this remarkable tree are beautifully lobed, of a bright green with gold edged margin in the fall. The branches are delicate as well as graceful. As to fruit—its berries are above ordinary size and almost seedless. So far as the lobing of the leaves are concerned, these will disappear as the trees get older; all mulberries have lobed leaves when they are young, and entire when of maturer age. This will be no disadvantage, as all the forms of the white mulberry are interesting, and this one will no doubt be a welcome addition to our list of weeping trees.



Teas' Weeping Russian Mulberry.

THE EFFECT OF COLORED WALKS IN LANDSCAPE GARDENING.—There are some kinds of gravel that recommend themselves to our notice on account of certain inherent qualities which they possess, among which we reckon that of strength to stand the wear of traffic; that of binding, to carry a good face after the roller; and last, but not least, to be of an agreeable color, so as to harmonize with the green of the lawn and the foliage of the flower-beds. The celebrated Kensington gravel was always considered the very perfection of gravel, and other kinds were valued according to their resemblance to Kensington gravel. Now, as I lived in the parish of Kensington, and trod the walks of Kensington Gardens, I may be allowed to speak of the article with some kind of authority, for the trade in gravel in my time was great, and we can form some idea of the statistics of the trade when a ton of coals and a ton of gravel from Kensington gravel pits were the same price in Edinburgh, whither the gravel was conveyed for important purposes.

When the elder Nesfield designed a monogram to be worked in Box embroidery and yellow gravel at Alton Towers, we had recourse to baked fireclay of a light yellow color, got from the Staffordshire potteries, called by the workmen "grog," being "saggers" pounded and riddled, these saggers being the outer cases containing the ware when in the oven, and this grog is a regular article in the business of the potter.

I have mentioned these two kinds of road-stuff in order to contrast them with an article very superior to either, the price of which, including cartage five or six miles, is 10*s*. per ton. I have used several tons of it, and find that it binds firmly, is clean from sand or small particles, and is of a rich yellow color, with a dash of brown, perhaps from iron ore; it was obtained for me by the good offices of a jobbing gardener, and comes from a place called "Fool's Neuk," near Macclesfield, Cheshire. I have often been astonished to see asphalted paths in front of the principal windows of gentlemen's villas done up in true coffin colors—white tears upon a black ground. In the

North we frequently see a black coffin studded with white commas, called there tears, and it is very becoming in that case to give a place for tears for those who have died young ; but the taste is very doubtful to put gas-tar and Derbyshire spar side by side on a walk or terrace in front of a gentleman's house, for as long as blue and yellow colors when mixed make green, so long will yellow gravel harmonize with green grass; and this rule is not subject to caprice, for it "altereth not."

Mr. Nesfield was a landscape painter of the the highest order, and designed many beautiful gardens, but he confessed that he was neither botanist nor gardener, but, relying on the "brush," he doled out in his parterres, panels, etc., many strange colors, for if I recollect aright, colored glass broken fine made up part of the patterns in the garden of the Horticultural Society at Kensington, and in the garden designed by Nesfield at Alton Towers some twenty or thirty circular beds were paved with white pebbles, which could not be endured, and were planted with exotics warm and bright. Neither white pebbles nor white spar are ever likely to give any good effect in a flower garden, and the same may be said of red brick pounded. Cracked limestone, when of a bluish tint, makes the carriage-way as good as it can be; and, for the reasons given above, the blue tinge harmonizes with the greensward just as the yellow does. I have no interest whatever in praising the gravel from Macclesfield. I was agreeably surprised to see its fine color and other fine qualities, and therefore resolved to send a paragraph to the *Gardener's Chronicle*, in order that those who do the asphalting on the coffin pattern may have no excuse if they do not finish with yellow ; for, be it observed, that this fine gravel is not in egg-sized pebbles and made up with foreign matter, as clay and sand, such as we see everywhere, but confined to the size of one-inch pieces and down to that of kidney beans, so that a ton would coat a large surface of asphalted walk, and it is equally available for any ordinary gravel walk, especially where clay predominates.

For asphalt the gravel should be thoroughly dry, for one of the many odd properties of gas-tar is that it is not soluble in water and does not take kindly to wet substances. For facing ordinary gravel walks the gravel should be put on wet, and treated as if it were puddle, for you may water ordinary garden earth to any extent so long as you do not tread upon it, but if you poach it you make puddle of it, and although a headland in a cornfield may be poached and yet recover itself and bring a good crop, it is not so in gardening operations, and soil that has been puddled will take a long time to recover a healthy open texture. Let no one despise these practical hints, for the loss of one spoke in the wheel ruins the "turn." I recollect setting a gentleman right as to how he was to roof a building with paper and gas-tar and lime, and when I met him after, he said he had tried it and it was a failure, but when he detailed the process he said, "I slaked the lime." That was sufficient; he had added water, which he should not have done, and the lime should have been fresh and pounded to powder. He thanked me, and we parted ; but the next time I saw him he pointed out a building nicely roofed in this way, and laughed heartily at his blunder in not knowing water when it was apparently dry in powder lime ; but all doubt on that score is removed when you see a man put a hogshead of water to a cartload of lime, and though the mixture is dry as dust it is useless to say there is no water there when you have just added twice the bulk of the lime in water.

The prevalence of weeds on walks is frequently owing to the prevalence of dirt in the gravel, which acts as a seedbed for grass, and this gravel, being clean and very likely highly charged with iron, from its appearance, is not likely to feed weeds of any kind. If used with judgment and discrimination it will brighten many a dull walk and terrace at little cost, and its brightness will remain after the flowers have faded, for it will exhibit itself all the year round "a thing of beauty," which, if not "a joy forever," will, with its face of iron and its heart of stone, have a long lease.—*Alex. Forsyth, in Gardeners' Chronicle.*

NEW OR RARE PLANTS.

A New Race of Gladiolus.—Kelway & Son, Florists, of England, have started wholly anew to raise a class of gladiolus from the original species. He has followed the selection rather than the hybrid system. His breed is characterized by having very close, dense heads and perfectly one-sided spikes. The *Gardeners' Magazine* says:

"In this respect the Langport varieties are far in advance of those raised on the Continent, and in the form and substance of the flowers they are certainly not surpassed. The flowers, more especially of the later introductions, are of exceptionally large size, the segments are of great breadth, and well rounded, and they possess the important quality of being so well expanded that the coloring of the face is seen to the best possible advantage. Messrs. Kelway, whilst continuing to improve the form of the flower and the build of the spike, have been successful in obtaining several exquisitely beautiful shades of color which are practically new in the gladioli."

A New Late Lilac.—The Syringa ligustrina proves to be a much later lilac than any now grown, and prolongs the favorite lilac season admirably. The Siberian lilac, Syringa Josikæ, comes in about a week or two after the Persian. This new one follows, and continues to near midsummer. The individual flowers are like the Privet, and they have the pleasant odor of Privet; but they come in huge masses as large as a bunch of Horse Chestnut flowers. The growth is much stronger and more tree-like than the ordinary lilac.

Narcissus, Glory of Leyden.—This is believed to be the largest variety cultivated. It was raised by Mr. DeGraaf, of Leyden. The bell is two inches wide at the mouth, and the whole spread of the flower nearly five inches.

SCRAPS AND QUERIES.

The English Bind-weed, Convolvulus arvensis.—"L.," Harrisburg, Pa., writes: "The enclosed is a fearful weed. What is its name, and how can I destroy it? It came into our garden, I believe, from some New York fruit trees in the first place." This is the "Lily" of the English peasantry. In popular botany it is "Field Bindweed," and in the science, Convolvulus arvensis. The white, cord-like roots all grow, so that the more it is chopped to pieces the more plants you have. But if you will cut it off with a sharp hoe as soon as a few green leaves are detected, and keep on about three or four times during summer, it can be easily destroyed. No matter how great a pest any weed may be, it can be easily destroyed if not allowed to make perfect leaves.

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

ALOCASIA MACRORHIZA.

BY W. F. M'ARA.

What a superb and graceful plant is the Alocasia Macrorhiza variegata! If not one of the best, it is certainly entitled to claim a position as being one of the most striking and effective ornamental-leaved plants which our stoves contain, and well deserving a place in every collection of fine foliage plants. No one can fail to admire a good specimen of this handsome variety, with its large shining green leaves, which are blotched and mottled with white, affording a rich contrast with other plants. This variety is a splendid subject on an exhibition table, and can soon be grown to a suitable size for that purpose, if due attention be paid to its requirements. It should be potted in a compost of peat and loam in equal parts, with some well decayed manure and a sprinkling of sand, giving them a place in the warmest part of the stove, where they can have plenty of light, but shaded from bright sun, to be copiously supplied with water at the roots, and the leaves frequently syringed, as red spider is a little partial to them, two of the most essential points in the successful cultivation of this class of plants being heat and moisture. On completing their growth they should have a season of rest. Propagated by offsets, or division of the root. This variety is supposed to be a native of the Island of Ceylon, and belongs to the genus of Arads, which are closely related to the Colocasia.

Waterville, Oneida Co., N. Y.

FERTILIZATION OF ORCHIDS.

BY WM. LYNN.

May 19th of this year Cattaleya Mossiæ commenced opening its flowers. A few days afterwards in the morning I was observing a very fine solitary flower. I also noticed a very large humble bee that had lodged in the greenhouse all night. Apparently, he was resting about eighteen inches below the flower, when suddenly he rose up and flew directly to the flower, alighted on the labellum, scrambled up it until he reached the column, which he raised without hesitancy, and using considerable exertion forced his way in; after satisfying himself, backed out and flew away. I made a mental note of the transaction. The result is a seed-pod going on to maturity. For several days a delightful fragrance was exhaled from the decayed flower. An examination disclosed an exudation from the tip of the column, which seemed to be decaying, having turned black. Here I located the source of the perfume, which has dried up.

Again, May 26, 1887, Barkeria spectabilis commenced opening its flowers. A few days afterwards, while admiring a solitary flower on one of the plants, and under the very same conditions as the foregoing, a honey bee alighted upon the broad labellum, seemed all excitement, and made directly for the point of the column which lies very close to the labellum. However, he unhesitatingly raised it up and forced his way in, came out and flew away. This incident I also made a mental note of. The result is, fertilization of Barkeria was effected.

A query presents itself. Why were solitary flowers selected in both cases by entirely different bees? Why did they not enter the other flowers of the same kind close by? There are none of the others fertilized. Is it possible that the flowers of each being solitary were stronger and exhaled a more attractive perfume, which the bees availed themselves of, and not finding it as desirable as they expected after obtaining it, flew directly away. *Fort Wayne, Ind., June 24, '87.*

"THE AMERICAN BEAUTY."

BY JOHN L. H. FRANK.

The articles of Mr. F. Harms and Dr. Ludwig Fritsch seem to indicate that they consider some of our American florists a bad lot of men indeed—when they, our "Yankee Garden Barnums," deliberately with malice aforethought and with the intention of cheating, gave an old rose a new name to enable them to impose it on their innocent customers at exorbitant prices. The Doctor and Mr. Harms have, of course, never heard of worthless new varieties and of old varieties being palmed off on American gardeners by European Barnums.

Now, what are the facts in the case? My understanding is that the American Beauty Rose stood some six or eight years in Mr. Bancroft's garden in Washington, D. C.; no one knew from whence it came nor any name for it; no American florist ever claimed to have raised it or to know who raised it; the chances were that it might be a known rose with a name, although no one about Washington knew it. It was found to possess superior qualities, and presumed to be a chance seedling, and the name of American Beauty was given to it. The name of Madame Ferdinand Jamain had been in our catalogues for some time, but the description of it was not such to induce an amateur who had only room for a limited number of plants to buy it.

I bought a plant of the "American Beauty" at a big price. I know that the florist from whom I bought my plant honestly believed it to be a new rose.

Is there not a great similarity in some roses? Some I can only tell apart by their leaves; others are so much alike that I cannot tell them apart.

Is Mr. Harms sure that the American Beauty is the Madame Ferdinand Jamain? Even he may be mistaken as to their identity.

Mr. Gustav Drobisch told me that he had the Madame Ferdinand Jamain for years—that it is of weaker growth and lighter color than the American Beauty, and that anybody who is at all familiar with roses could readily distinguish one from the other. For the benefit of Dr. Fritsch I will say that Mr. Drobisch is a "true gardener," one of the leading florists of Columbus, Ohio, who has been continuously from childhood up a gardener and florist, and that his testimony is entitled to and will receive as much credence from a fair and impartial jury as that of Mr. Harms; at the same time admitting that few men, if any, have more experience in the propagation and cultivation of roses than Mr. Harms.

Whether the American Beauty is an old or a new variety, I consider it quite an acquisition, not because of its superior forcing qualities, of which Mr. Dunning speaks and of which I know nothing, but because it is a hardy rose with slight protection, is nearly always in bloom through the summer and autumn. When it is well known that most of our so-called hybrid perpetuals or remontant roses bloom only once, like June roses, it is strange that this blooming quality was not discovered in Mad. Ferdinand Jamain, if it possesses it. For comparative hardiness and constant blooming I consider La France and Glory de Dijon best and American Beauty next best, for an amateur without a greenhouse.

I wish that you or some of your readers who are able to do so would tell me how to protect tea roses out doors in winter in Central or Southern Ohio, so as to keep not only the roots but most of the tops fresh and alive.

I was very much disappointed in the Bennett last year, but it lived so well out doors through last winter—fully as well as La France—and, although a very slow grower, has had so many roses, and some very fine this year, that I have become an admirer of it.

I think the American Beauty has an origin similar to the "Nameless Beauty." Mr. Max Deegen, of Köstritz, found it among a lot of roses which he had bought; it had no name, but it was a superior rose. Mr. Deegen tells us all he knows about it, and calls it the "Namenlose Schöne." I bought a plant of it last April at a good price, and find it a fine rose, but if it should turn out some day that it is an old rose under a new name, I do not think that I would be justified in calling Mr. Deegen a swindler or Garden Barnum. I would think that he was laboring under an honest mistake when he made an "old beauty become young again" by daubing it with a new name.

Southern Ohio.

TEA ROSES IN PITS.

BY H. HEATON.

Plant your roses in frames six by three. Pitch rather flat, as I find when the pitch is steep it forces them too much in the spring. The earth at the back of the frame eighteen inches from the glass. The frame sunk twelve or fourteen inches. Eight roses to a frame. Eighteen inches of good soil for the plants to grow in, and I think the result will be satisfactory. To grow M. Niel or other tender climbers I should have a pit six by six. Excavate the centre two feet and a half. Board up twelve inches inside from outside of frame, and plant your roses in this space, but have your earth in this space eighteen inches from the glass at back of frame. I have an M. Niel planted in this way, and it has given me thirty fine roses this season to date. In the fall I cut my teas back to about eight inches from the glass, close my sash when I leave my place in Nov., sometimes later, and they are never opened till April. I seldom lose a rose if I plant in spring or early summer.

My roses do better not to have the glass covered. I have tried all kinds of covering, but have discarded everything. What roses in pits or frames suffer from is not cold, however intense, but warmth. Last winter in the pit where I have my M. Niels and a few teas planted, some boys broke the glass before I returned. I found some eight or ten lights broken, the lower part of the pit filled with snow. The thermometer had registered five degrees below zero in my grapery. I thought my roses were killed. They came out all right and have never done better; but some fifty cuttings which were pulled off in September—teas and hybrids—were all killed but three.

I do not try to force my roses in spring, but keep them back as much as possible. I picked my first tea rose the fifteenth of May. The first "Jack" outside bloomed the eighth of June.

I have a number of roses that have been growing in pits five years. The M. Niels did not give me much bloom the first two years, but since that have done well. I take my sashes off about the tenth of May. The Hybrid Teas grown in this manner do finely.

I would say that anyone will have fair success growing teas in this way; by taking four boards any size and nailing them together, cover in winter with boards, but in such a manner that rain or melting snow will not run into the pit.

Amherst, June 13, 1887.

HEBECLINUM IANTHINUM.

BY CHARLES E. PARNELL.

The violet-colored Conoclinum, or, as it is often called, Hebeclinum ianthinum, is a very showy stove or warm greenhouse plant belonging to the Natural Order Compositæ.

It is a native of St. Catharines, Brazil, and may be described as being a plant of shrubby habit, growing from two to six feet in height, having erect, round, woody stems, and opposite, oblong, ovate, deep green leaves. The flowers, which are of a violet color, are produced in crowded terminal corymbs in great profusion during the late winter and early spring months. It is a plant that can be found in but a few collections at the present day, owing to the fact that it is of little value for cut flower work, but nevertheless when full grown it is an excellent show or exhibition plant, and it will be found to be of great value for the decoration of the warm greenhouse or conservatory during the late winter and early spring months.

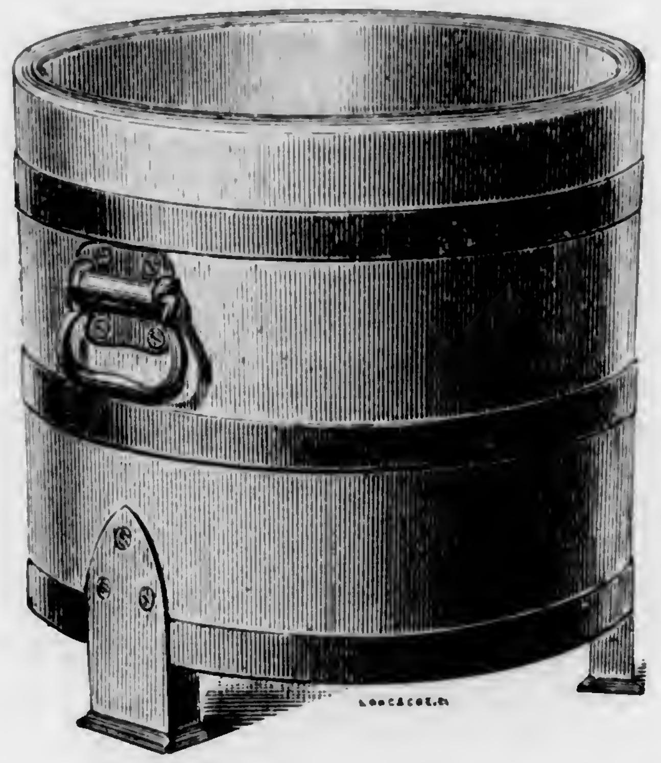
It is a plant that can be easily cultivated, and one that will be found perfectly free from all insect pests. It does best when grown in a compost of two-thirds well decayed sods, one-third well decomposed manure, intermixed with a fair sprinkling of bone dust. The plant should be given a light sunny situation, a temperature of from 55° to 60°, and, during its season of growth, a liberal supply of water both overhead and at the roots. When the plants show signs of flowering give copious supplies of liquid manure two or three times a week. As the Conoclinum is a plant of robust growth it should be given a liberal allowance of room for its roots, but care must be taken in this respect, as the plant will not thrive if the soil becomes sour or water is permitted to stand around its roots.

About the middle of May the plants should be planted out in a deep, well enriched border, and as soon as dry, hot weather sets in a mulch of coarse, littery manure should be given, and whenever necessary, thoroughly watered. About the first of September the plants should be carefully taken up and potted, and on the approach of cold weather brought inside. Propagation is effected by cuttings of the half ripened wood placed in sand and given gentle bottom heat, and if the young plants are liberally cared for by being re-potted as often as necessary, nice specimens can soon be obtained.

EDITORIAL NOTES.

TREE TUBS.—Everybody knows that after getting our tubs for large plants made of the most enduring woods, we are often worried over the rotting away of the bottoms through contact with the earth.

Clement & Dunbar, of Philadelphia, who make the preparing of cedar tubs for plants a specialty of business, have an arrangement by which independent feet are fastened to the tub, as in the cut annexed. It is a capital idea, and will be much appreciated by the many who have had to worry over new bottoms for old tubs.



PACIFIC CUT FLOWERS IN EASTERN MARKETS.—In our last we gave an extract from an English source in regard to the successful sending of cut flowers of the Puritan Rose three thousand miles across the ocean. There is no doubt if it can be done with one rose it can be done with another, and if it can be done over the ocean it can be done over the land, and it will be done more perfectly as experience teaches how to improve on the processes. It would seem scarcely possible to raise flowers cheap enough and bear the expense of a voyage across the ocean, and still compete with the English grower of cut flowers; but it is not at all impossible to come about as an actual fact, for the population of Great Britain is so large that there are few articles raised there equal to demand, and they have to look to other portions of the world for the balance of supplies they cannot raise for themselves.

We have no doubt it was the thought of our enterprising florists, on reading that paragraph, that they might live to see a profitable cut flower trade from our country with the Old World. But while Eastern florists of our country may be thinking of making this commercial raid on the floral markets of the Old World, the Pacific florists are thinking of making a similar raid on the East. Cold storage has been reduced to such a fine art that capitalists have been found willing to invest largely in the venture, and we believe arrangements have been made the coming winter and spring to ship East enormous quantities of cut flowers. We have heard of one firm that has planted out 25,000 roses. 30 000 tuberoses have been planted, and so great is the confidence in success that arrangements have been made by this one firm to have ten acres of tuberoses next year, all for the sake of the flowers alone.

To make success certain the firm will have "two strings to its bow." Perfumery is to be a part of the business. Whenever the price of flowers falls below a paying price their goodness will be extracted for the benefit of the lovers of odor all over the world. Thirty acres are already in actual use, and it is believed that two hundred can be profitably worked in this way before this time next year. This is the outline of but one single firm.

Usually capital is easily frightened, and the fact that enormous capital has been found for the venture shows that the chances of success have been carefully scrutinized, and that the venture will probably be fully equal to anticipation.

When we remember how the profitable branch of growing hot-house grapes was almost wholly superseded in the East by the success of California shipments, Eastern florists may well feel that the influx of California flowers may produce similar results in some degree.

NIPHETOS.—Judging by the following, a correspondent of the *Gardeners' Chronicle* does not think anything will beat Niphetos as a White Tea. But then it is such a delicate grower in American rose houses.

"A Tea has reached us from America which has been received with much favor; it is a sport from Catherine Mermet, the pink of that rose being replaced with white, and a slight soupcon of primrose at the base, about as much as we see in Gloire Lyonnaise; a box of it was exhibited this spring at one of the Royal Horticultural Society's shows by Mr. D. Gilmour, jun., and was greatly admired; but the general opinion, I think, was, that as a white tea rose Niphetos still holds the palm. There may be other roses which may come to the front, but I think these will be amongst the most noteworthy."

THE METEOR ROSE.—Of this Mr. Evans says: "This is a remarkably rich dark velvety crimson Hybrid Tea rose, without the least tint suggestive of purple. It is a constant and good bloomer, very vigorous and healthy in growth, with no tendency to mildew. No red rose ever before offered retains its colors as does 'The Meteor.' A Philadelphia florist who has handled a few blooms during the past winter pronounces it 'the best keeping rose he has ever seen,' he having kept it for one week without any visible change in color. I consider that a superior merit in this rose consists in the fact that, in addition to its good winter-blooming capacity, it is at the same time a glorious rose for the summer season."

CUT FLOWER ARRANGEMENTS FOR A DINNER TABLE.—The *Journal of Horticulture* thus describes the floral arrangements at a very aristocratic dinner table recently:

"The table was laid for thirty, and light was supplied by five candelabra arranged down the centre. The central one was raised on a block one foot high, the next pair nine inches, and those at each end on blocks six inches high. Sheets of brown paper were placed right down the centre of the table. Mounds of fresh green moss were then formed around each of the blocks with a gradual slope to the top. The diameter of the central mound at the base was about twenty inches, the next pair seventeen, and the outside ones fifteen; the space between the mounds was then covered with moss, but instead of joining the outer edge of it in straight lines from one mound to the other, it was hollowed out so as to form the arc of a large circle sweeping towards the centre of the table from either side, which gave the whole design an informal appearance. It is now easy to imagine the centre of this as being covered with moss, with mounds rising around the candlesticks, and the outline hollowed out between the mounds; when this is done the most troublesome part of the work is over. The outer edge of the moss was then edged with brightly colored pieces of Alternanthera amœna, which formed a beautiful contrast to the white tablecloth on one side and fresh green moss on the other. Two light, graceful Palms were next placed between the central candelabrum and those on each side of it, and small mounds made at their base to cover the pots. In the centre of the space between the other candlesticks two more mounds were formed around plants of Pandanus Veitchi, and at each end of the table a noble-looking Pine was placed; the whole surface of moss was then dotted irregularly with flowers of bright and distinct colors, such as Poinsettias, Camellias, white Chrysanthemums, Eucharis, Epiphyllums, Primulas, Carnations, Pelargoniums, and Azaleas, with small sprays of Salvias and flowers of Cyclamen peeping up here and there among fronds of Maidenhair Fern, with fronds of Pteris serrulata standing up well above the flowers. Fronds of Polystichums angulare proliferum, with Nephrolepis tuberosa and Cyperus springing up around the base of the candlesticks, completed the arrangement, the whole having the appearance of verdant undulating banks, with flowers and plants springing up from them in charming simplicity and profusion."

ROSE, THE PURITAN.—In regard to the manner in which these were shipped from America: Two dozen cut blooms were staged, all of which had been received from America in the "Etruria," which left New York on the 2d inst., and arrived in Liverpool on the 11th inst, the bloom being conveyed thence to London by rail. Half the number of blooms were conveyed upright in tubes of water, and the others were firmly packed in damp cotton wool in tightly closed tin boxes, and these traveled better than the others, arriving in a remarkably fresh condition.

TUBEROSE BULBS.—Natal, in South Africa, now raises tuberose bulbs of such excellent quality, that they bring fair figures in the London market.

CHEAP ORCHIDS. — In England this means orchids that can be bought for about one or two dollars each.

SOWING SEEDS OF AMARYLLIS.—A correspondent of the *Gardeners' Chronicle* says:

"Sow about fifty seeds in a 5 inch pot, place in a good bottom-heat, and they will vegetate in two or three weeks. In a month or so from the time of sowing prick the young plants out in 5-inch pots, a dozen in a pot; plunge again in bottom-heat, and they will form strong plants by the end of the season. It is very important that the plants be grown well, as it makes all the difference as to the time of flowering. A very large proportion of the plants have to be thrown away when they have flowered, therefore it is desirable to get them into flower as soon as possible. I have obtained flowers in nineteen months, but many plants will take a year longer, and some will not flower until the third year. They get very little rest with us until they do flower; the first winter they are kept continually in a growing state, and the second winter nearly so.

CALLA LILY.—Calla lily by the florists of this country is the name of the Arum lily of the English florists. The old name was Ethiopian lily, and it has been called Easter lily—no doubt other English names will be given to it—but the one botanical name of Richardia Ethiopica, will identify the plant all over the world, though it may be a hard name for some to remember.

POT MIGNONETTE.—In the Old World an enormous number of pot plants are grown and sold for window or small conservatory culture, of some popular flowers; there are sometimes florists who grow only the one kind. One who deals almost exclusively in Mignonette, and consequently excels in its culture, grows the plants in the following way according to the *Gardeners' Chronicle:*

"For some years this fragrant favorite has been grown here in a way that, taking into account the small pots in which it is grown (in 48's) I have not before seen equalled, either for the size and vigor of the plants, or the profusion of flowers they carry. The first sowing is made in July, the plants from which are in flower early in March, successional sowings being made so as to keep up a supply through the summer. Of the first sowings one plant is grown in a pot; from the spring sowing, several together. The variety grown is a selection from the French sort—Matchet—and which Mr. Ward considers unequalled for pot culture, both for the robust habit of the plants, and the length and substance of the flower-spikes, those on the plants selected for seed frequently reaching a length of 18 inches: it is a red-flowered variety. After the plants are housed in autumn they are stood in single rows on shelves that run along over the paths down the centre of the houses; here, close to the glass, they keep short and stocky. The plants from the early sowings are stopped once, and the side shoots are all tied out horizontally, so as to secure well furnished bottoms. About 6,000 pots are grown."

It may be remarked here, that the English follow the old plan of naming their flower pots according to the number of pots that can be made out of a bushel of clay. They can get forty-eight flower pots out of this measure, 4 inches wide at the top. Instead of calling it a 4-inch pot, they go as 48's.

COLOR IN PLANTS.—No variation of plants is more common than those of color, and the color of plants is one of the readiest marks of distinction. We find it scattered through all the classes of nature animate and inanimate, decking with tints of equal brilliance the shell, the gem, birds, beasts, and reptiles, clouds which attend upon the rising or setting sun, as well as our leaves and flowers, and with no apparent use but that of delighting and cheering mankind with a perpetual display of beauty.—*London Journal of Horticulture.*

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NEW OR RARE PLANTS.

NEW KINDS OF MIGNONETTE.—The growers of England are still trying their hands at raising new varieties of Mignonette. The latest result of their labors is Cannell's Perfection. The flower spike measures four inches long and two inches broad, according to cuts that we have seen.

A NEW ROSE SPORTING FROM SOUVENIR DE LA MALMAISON.—The *Deutsche Gärtner Zeitung*, of Erfurt, says that a beautiful sport has been secured from this famous old variety. It appeared on a plant in a garden at Lubeck. The branch has been propagated, and the variety has proved permanent.

A NEW STYLE OF CINERARIA.—A Scotch paper says of an exhibition: "Messrs. Gordon & Son, nurserymen, Edinburgh, exhibited Cineraria Alexander Warwick, in which the florets were slightly convoluted from about half their length to the base, thus showing the under side in the manner of Gaillardia Lorenziana. The flower is distinct from anything else, and is not wanting in a certain elegance, which would, of course, vary with the color."

SWEET-SCENTED CHRYSANTHEMUMS.—A variety called Progne is said to be pleasantly sweet-scented.

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SCRAPS AND QUERIES.

CARNATION, OLD-GOLD.—Under this name Mr. Higley, of Cedar Rapids, Iowa, sends us a flower of one, which describes its color in its name. It is a very good one, and may become popular, should the taste, always uncertain, run in the direction of that color.

COLUMNEA SCHEDIANA.—Mr. Higley sends a plant for name, which we give above. It is a gesneraceous plant, and is useful for baskets.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

A very suggestive article in our last was that on strawberries. But it was written by an amateur for amateurs, and would scarcely be "payable" for market growers. They prefer as a general thing to plant in spring, give one year to culture and growth, and have the fruit crop the next year. Still, the number who plant in fall is large, and is increasing since the wide-spread method of growing the runners for a little while in pots was introduced. The pots are filled with rich earth, sunk in the ground around the mother plants, and in a few weeks have a little ball by which they can be transplanted without the slightest check, though shipped hundreds of miles. Almost a full crop can be had in this way the following season; though, probably the growers could not afford to sell them at the price per quart good fruit could be bought for in market.

There are, however, many cases where pot rooted runners cannot be had, and the old method must be resorted to. But there is a right way and a wrong way even in this. The following among the right ways would be regarded as a very good way:

After a piece of ground is dug at this season for strawberries, roll it well with the garden roller. When ready to plant make holes with a dibble, fill the holes with water, and when it soaks away, put your plant which has been kept in water to prevent wilting. But, in putting in the plant do not plant too deep. "Too deep" kills ninety-nine hundredths of all the strawberries that die in the year from transplanting. "Too deep" is when anything but the small fibres are buried under the surface.

In the story books we sometimes see pretty pictures showing how strawberry roots are to be "spread all around nice." A little cone is made in the middle, the plant set on the apex, and the roots running like mountain streams down the cone on every side. This is a very pretty plan, but will give us no more strawberries. There is little romance in a strawberry fibre. They push out, pump water into the plant for a few months and then die. No strawberry root lasts twelve months. New ones push and old ones die daily.

All things considered, for an amateur garden the best plan is to set the plants in line six inches apart, the rows eighteen inches apart, and every fourth row omitted, as it were, to form an alleyway between the beds; on this plan, as the plants grow, they can either have their runners cut off, or they may be allowed to go together in bed form, according to the kinds grown or views of the grower.

Even where pot grown runners are employed care must be taken not to have the crown below the surface of the earth.

The grape-vine at this season will require attention to see that the leaves are all retained healthy till thoroughly ripened. It is not a sign of healthiness for a vine to grow late; on the contrary, such late growth generally gets killed in the winter—but the leaves should all stay on to insure the greatest health of the vine until the frost comes, when they should all be so mature as to fall together. Frequent heavy syringings are amongst the best ways to keep off insects from out door grapes, and so protect the foliage from their ravages.

This cannot, of course, be done on a large scale, and where fruit must be produced at a certain low figure or not at all. For, all plans for drawing liquids for syringing purposes, necessarily involve heavy hauling and expenditure. So far as we know there has been no cheap method introduced for the destruction of such injurious insects as the grape-vine leaf hopper.

In the East this season the lant caterpillar has been very destructive—much more so than usual. Trees have been stripped of foliage as completely as if attacked by the canker-worm. There is little excuse for this damage, as in many cases the branches could have been cut off and burned before much damage was done, and branches out of reach been aided by a torch on a long pole.

As soon as your vegetable crops are past kitchen use, clear them out. Never suffer them to seed. In the first place, a seed crop exhausts the soil more than two crops taken off in an eatable condition; in the next place, the refuse of the kitchen is likely to produce degenerate stocks. Good seed saving is a special art by itself, always claiming the earliest and best to insure a perfect stock.

Celery will require earthing up as it grows to get it to blanch well. It is not well, however, to commence too early, as earthing up tends, in a slight degree, to weaken the growth of the plants. Take care, also, not to let the soil get into the heart in earthing, or the crown is apt to rot.

As fast as endive is desired for salad it should be blanched. Matting thrown over is the best for this purpose, as the plants are not so liable to rot as when pots or boards are employed.

In cold or mountainous regions melons are hastened in the ripening process, and improved in flavor, by a piece of tile being placed under the fruit.

Keep weeds from your compost heaps, as they exhaust the soil, and bear seeds for future brow-sweatings.

Sow lettuce for fall crop thinly, and in deep and very rich ground.

Early Valentine beans may still be sown early in the month—the soil for a late crop should be well trenched, or, if the fall be dry, they will be stringy and tough.

Cucumbers, squash, and other similar plants, often suffer from drought at this season. Cold water does not help them much, but a mulching of half-rotten leaves strengthens them considerably.

Cut down straggling herbs, and they will make new heads for next season.

Towards the end of the month, a sowing of spinach may be made in rich soil, which will come in for use before winter. That desired for winter and early spring use is usually sown in September in this region. A few turnips may also be sown for an early crop, but will be hot and stringy unless the soil is very rich.

Corn salad is often sown at the end of this month. It does not do so well in damp soil or low situation.

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COMMUNICATIONS.

FRUIT GROWING AND CHANGE OF CLIMATE.

BY AN OLD ENGLISHMAN.

If I read the GARDENERS' MONTHLY aright, I believe its estimable Editor does not believe in a change of climate, and consequently that fruit-growing will vary in its successes according as climates change. I am inclined to believe that there is more change in climate going on than the Editor seems willing to concede. As I had my early gardening education in England, I may be pardoned for referring to English experiences. There can be no question that centuries ago the European, or foreign grape as we say here, did well in most parts of England. The old monks almost all made excellent wine from the grapes they grew in their cloisters; and in almost all parts of the south of England there are localities known as the "Vineyard," showing that at some time in the vague past grape-vines were grown there. But there is nothing more certain now than that this grape will no longer ripen anywhere in the open air in England. I do not mean to say that it cannot be done. There may be a case here and there to show what I say is not absolutely true; but certain it is that any one would be regarded as crazy, certain sure, who would set out a vineyard as the jolly old monks used to do.

Now, as to peaches; when I was a boy, and in training for a gardener, the place where I learned the business was famous for its peaches. They were trained fan-shape against the southern face of a brick wall. It was about the whole of my autumn, winter and spring work to prune and train those peach trees, under the instructions of the chief gardener. With a bag of "shreds" made from the refuse of the tailor's shop, cast iron four square nails, a hammer and short ladder, every branch was trained out as regular as the veins on a bat's wing. I tell you I used to be proud of that wall of peaches! Whoppers as big as your double fists and as sweet as honey! Just imagine thousands of these rosy-cheeked beauties from the ground to the coping for hundreds of yards in length along this wall! I have never seen peaches like these in America, fine as they often are, and I have often been mocked and jeered for saying so.

Well, I took a trip with some American friends to the Old World a few years ago, and promised to show them something in the peach line that would make their mouths water. Gracious Jupiter! I couldn't find any good for anything, and I began to be ashamed of my position. Determined to prove my words, I took a journey to my old place with my American friend. The old gardener was still living, and before I had hardly got into the grounds he commenced apologizing for his peach trees. "They didn't do good no more." Sure enough, it was a pitiable sight. My old friends had been long rooted out, and new ones, with new soil and everything! Half bare walls, poor trees, and few miserable peaches. "The climate has changed," said he; "you will find it so everywhere;" and so it was. I did not see a peach tree anywhere as I had known them in my boyhood days.

I thought perhaps it was a bad year. But by the English papers, which in memory of old times I still love to read, I find that it was not temporary, but continuous. I take the enclosed extract from the *Garden*, which I hope you will find room for, as it confirms my statement:

"I can remember when we used to gather the Royal George, Noblesse, and other peaches in first-class style, both for size, coloring and ripening outside; they, indeed, compared equally with many now grown under glass. At this time the trees gave not only a few good specimens of fruit, but literally basketfuls; and the period in question extended from the year 1860 to 1870. Before that time, I cannot say, from experience, if they had thriven so well. A marked change took place, beginning about the end of the latter year, and ever since not only did these crops diminish in quantity annually, but now, in the same garden, the trees themselves refuse to grow. Each year saw the verdant trees on the wall torn away piece by piece, leaving only a wretched, half dead stem, with few limbs, boldly struggling for existence, at varied intervals, until at length their increasing unsightliness occasioned their entire removal. While undergoing this change, they were devastated by all manner of diseases and insect pests, such as red spider, green and brown aphis, and that strange disease, caused by a fungus, which results in the curling and thickening of the leaves. It was interesting to see the action of this disease upon the leaves in some seasons. As a rule, the whole of them were attacked and ultimately fell off, new ones taking their place; and often many were only affected on one side of the mid-rib, giving that side, in some cases, not less than four inches in breadth."

Now, is it not the same in America? The foreign grape grew here once very well; but no one can do it now. New Jersey was once the paradise of the peach grower; but though there are yet spots where they thrive admirably, it is rather exceptional than the rule. Are not all these evidences of climatic changes? I would not venture to send these remarks to some papers. Editors do not like to be contradicted; but the Editor of the MONTHLY seems rather to court than avoid criticism, so I am tempted.

[Exactly. The Editor of the GARDENERS' MONTHLY feels like the judge who asserted: "This court would rather be right than be President."

Still, while we admit all the facts, we cannot see how such sudden changes can come from gradual changes of climate. We fancy there must have been some other causes at work. But the subject is too broad to be discussed here now. We are thankful for the criticism.—Ed. G. M.]

PEARS AND THEIR HISTORY.

BY THOMAS FRANCIS RIVERS.

I have been asked to give some account of what I know about pears. There is, of course, much to be said about a fruit which more than any other attracts the attention of the cultivated pomologist from the extraordinary development it has attained in our own time, the ancients having been contented with fruit certainly unequal in flavor to that which we enjoy. M. André Leroy, in his dictionary of pomology, has taken the trouble to make very learned researches regarding antique pears, and enumerates four Greek and thirty-five sorts of ancient Rome; but he does not fix the time when these ceased to be catalogued, and gives only twelve sorts of Italian pears between the fifteenth and sixteenth centuries, the varieties cultivated in France from Charlemagne to Louis XIII. numbering two hundred and sixty kinds. Pliny names twenty kinds. Varro, Palladius, Cato, Columella, and Virgil are also pomologists and pear lovers. The latter is very urgent in the matter of grafting pears, but seems to have been aware of the modern axiom that "he who plants pears, plants for his heirs."

In 1665, John Rea published the "Flora, Ceres, and Pomona," in which he gives a list of twenty-one pears, described as being very good, one of them rejoicing in the extraordinary name of Dead Man's pear. He describes the Winter Bon Chrétien as one of the most excellent, but requiring to be grafted on the Quince stock and trained to a wall. He also says, "that there are several good sorts of Wardens and baking pears." In 1693, John Evelyn published a translation of the works of Monsieur de la Quintinye, a very voluminous, exact, and twaddling French author. In advising the setting out of a plantation of dwarf pear trees, he begins with the choice of a dwarf tree to be planted alone—*i. e.*, the Winter Bon Chrétien, giving several reasons for this preference. "1. Because of its antiquity, and that by its singular excellence it gained the admiration and courtship of the world, the great monarchies, and principally that of old Rome having known and cultivated it under the name of Crustumium. 2. It was baptized at the very birth of Christianity itself, and consequently it should have the veneration of all Christian gardeners. 3. It should be considered of itself and with respect only to its own proper merit, which alone can entitle it to a preference." This is, at all events, a very proper decision to arrive at, but the Winter Bon Chrétien has not kept the high rank assigned to it. De la Quintinye indulges in the most extravagant expressions of esteem: "That it grows to the weight of two pounds, that it is considered a handsome present to persons of quality, and that it is a pear the beauty of which has caused the ablest gardeners to labor for it with the greatest passion." I have had a good experience of pears, but I have never known this precious pear except by name, but it may have degenerated, or we of the present time are more particular in our tastes. Of the other varieties named by Mons. de la Quintinye, the Autumn Bergamot, the St. Germain, the Colmar, and Crassane, have survived to our own time, but without holding rank as first-class fruit; he, however, highly commends the Beurré Rouge, classing this as a synonym of the B. d'Amboise and Isambert, which he says "possesses the first degree of goodness—viz., a smooth, delicious softness with a fine delicate pulp," wasting many good epithets on the Winter Bon Chrétien which would have been more properly applied to the Beurré Rouge. The Autumn Bergamot is not highly commended, although our friend says, "that it has a numerous and formidable party, and, indeed, that a thousand people assert that for its tender and melting pulp, its sweet and sugary juice, and the little smack of perfume which accompanies it, that it is more valuable than all other pears in general," remarks which a great many ignorant people make at the present day. De la Quintinye names some ninety or a hundred sorts of which some of the names are expressive, as Greedy Guts, Chew Good, Daughter of God, or Fille Dieu. Some few of the sorts remain, among them the Rousselets, Chaumontel, and St. Lezin. De la Quintinye's reasons for the enjoyment of pears are curious. He states that "the rigorous cold which lasts from November to March enjoins our placing ourselves near the fire, and that to counteract the external foreign heat then taken in, Nature has provided us with pears to prevent the great infirmities which might happen to us from the enjoyment of so much heat. So, precisely at this time she has given us an admirable quantity of tender fruit, such as Bergamots, Louise Bonnes, Les Chasseries, Amberts, Virgoulees, Epines, and St. Augustines." This garrulous author provides for the plantation of a thousand trees, but states that "the planter of so many would be a curious gentleman, for how could he dispose of 12,000 pears unless he gave them away or made perry of them?" This difficulty would not be felt now. He concludes his remarks on pears by a list of fifty good, forty-four indifferent, and sixty-six bad sorts.

In 1729, Batty Langley, in the "Pomona," gives the names of fifty-seven pears. Those which are named by him and still cultivated are the Brown Beurré, Autumn Bergamot, Hampden's ditto, Crassane, Epine d'Hiver, Jargonelle, Swan's Egg, and Windsor, among baking pears the Black pear of Worcester and Catillac. Mr. Langley is not enthusiastic about pears.

Switzer enumerates eighty pears, advising the planting of the English Bergamot, "because of its goodness and antiquity, it being not impossible that it has been an inhabitant of this island ever since Julius Cæsar conquered it, and that possibly it was the Assyrian Pear of Virgil, and was, as may be deduced from this, a part of the celebrated Gardens of Alcinous." A tree of this sort in the Sawbridgeworth Nurseries is said to be 300 years old. The pears selected by Switzer appear certainly to have been the best of that time, and he testifies to the extreme goodness of the Winter Bon Chrétien.

Philip Miller, in his "Gardeners' Dictionary," 1759, begins his list with Petit Muscat, and passes on to the Chio, Citron des Carmes, La Bellissime, bearing two crops in July and September, Jargonelle, and Cuisse Madame. The Cuisse Madame of the French is classed as a good pear, and the Jargonelle as third rate; but Mons. Leroy describes the Cuisse Madame as a small inferior pear, ripening about the end of August, considering it as one of the few historical Greek pears which have come down to us. The Poire d'Epargne or Jargonelle of André Leroy does not correspond with the outline of our Jargonelle, and he does not praise the fruit, calling it good only for the season. Our true English Jargonelle when ripened on a wall is exceedingly good, juicy and refreshing. Probably the spurious Jargonelle, which undoubtedly exists, has been introduced by those who have imported this sort from France, having been misled by the name, not being aware that the Jargonelle of the French nurseries is not the kind which passes under that name with us. Leroy says that Miller has muddled the Jargonelle, and that the confusion caused by him has lasted to our own time, the mischief arising from the Jargonelle and Cuisse Madame being classed by Mills as synonymous.

Miller names eighty sorts, and states that he has included in his list many sorts that are not worth planting, to please those who are fond of a great variety. He is aware of the eccentricity of the

ripening period of pears, for he says, "I have known the fruit of a pear tree in one year all ripe and gone by the middle of October, and the very next year the fruit has not been fit to eat until the very middle of December." All of us can endorse Miller's remarks. I have found it a very difficult matter to fix the date of ripening, and the variations noticed in 1759, find their equivalent in 1886. In reference to this matter, Miller says that "if we look back to the best French authors of fifty years ago, they put down the times of ripening of pears a month or six weeks later than now, and that in London it is much about the same, the time of ripening in London being quite as forward as Paris." This remark does not seem to indicate that the climate is becoming colder, as many are inclined to think. There are many writers on pomology after Philip Miller, but as far as the names of pears are concerned we may step from 1759 to 1831, when a book was published by George Lindley and edited by Dr. Lindley, entitled "A Guide to the Orchard and Kitchen Garden." The list of pears is here brought down nearly to our own time, 150 dessert pears being enumerated, among them many of our old friends of 1665, 1693, 1729, 1731, and 1789, and adding to the list a number of new sorts raised from seed by Van Mons, Nelis and others. According to Lindley many of these are not worth much, the Duchesse d'Angoulême and Beurré Diel being credited with special praise, the Marie Louise, however, not being very highly commended. In 1842 the Royal Horticultural Society published a list of 442 sorts, and Dr. Hogg, in the fifth edition of the "Fruit Manual," 1884, describes 732 sorts. André Leroy, in the "Dictionary of Pomology," has 915 sorts, and the cry is, "Still they come." The new sorts that have been constantly introduced showing that the highest standard of excellence has not yet been reached, and that no fruit is so susceptible of high development as the pear, as it advances step by step with the higher cultivation of man; this advance being by no means rapid, as it has taken many centuries to produce a pear of the quality of the Doyenné du Comice, this fruit being far superior to any of those noticed by Lindley in 1831.

It is curious that Shakespeare, country bred, should never have mentioned pears by name, save once, in "Romeo and Juliet," when he alludes to the Popperin pear, now known in Worcestershire as the Poplar pear, still one of the common perry pears of the county. It is evident from this meager notice of pears that Shakespeare's tastes were not gratified by good fruit. In "The Merry Wives of Windsor," he uses the phrase, "crestfallen like a dried pear." The plump and juicy pears of our century when fallen rot before they wither, but the tough perry pears wither before they rot. Worcestershire abounds with pear orchards, and Shakespeare, had he seen these orchards in full bloom, would surely have expressed his admiration. There is no allusion in any of his plays, poems, or sonnets to the beautiful spectacle of a pear tree sheeted with its snow-white blossoms. Another country poet, Robert Herrick, although enthusiastic in praise of strawberries and cherries, never alludes to pears. Herrick spent the best years of his life in Devonshire, which must have been almost destitute of pear trees. Sir John Suckling celebrates the charms of a young lady in his lines—

Her cheeks are like the Katharine pear,
The side that's next the sun.

Batty Langley notices two Katharine pears, the Royal and the Queen.

[It is interesting to note that few English writers, in their histories of pears, refer to the work of Bauhin in Wurtemberg, to which we made recent reference. It showed that pear culture in Germany three hundred years ago, was more eminent than modern authors credit that age with.—Ed. G. M.]

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EDITORIAL NOTES.

The Curculio in California.—"F.," Chicago, desires to know: Why the curculio has not been introduced into California, as well as the codlin moth, so destructive to the apple?

We can only say that it has been found in several instances, we believe, but so far has not found out the happy faculty of spreading itself.

Though it has been found, it is so rare, that the conclusion is reached that there is something there unfavorable to its success.

Forcing Strawberries.—For all the talk of having fruit from the southern parts of our country, there are several months when strawberries are not to be had; and those who are forcing them find great encouragement. We have had several articles in recent volumes from our own growers, but as the art of forcing strawberries has reached great perfection in the old world, we give the following as the experience of one of their best growers. "32's," we believe, are five or six inch pots:

"I have for many years read articles in the *Gardeners' Chronicle* and other gardening papers on the best strawberries for pot culture, but do not remember having seen Auguste Nicaise recommended for that purpose to those who are not always successful with other varieties that they have grown. I have grown this sort in pots for several years, and have found that, with good treatment, it invariably produces excellent crops of very large fruit. I have this year gathered fruit from it, eighteen of which weighed a pound, and these from plants growing in 32-pots, with from twelve to twenty strawberries to each plant. The treatment the plants received, from which the above-mentioned large fruits were gathered, was that they were layered in small pots as soon as the runners were procurable, contrary to the practice of many gardeners; but if plants are desired with good strong crowns before winter, there is nothing like making a timely show. When well rooted they were potted in 32's, and as soon as these were fairly well filled with roots they received weak manure-water two or three times a week until the autumn. They were wintered in a cold pit, and in the spring put into the vinery, not having the advantage of a strawberry-house. The plants were taken in some time previous to closing the house, or putting on heat to start the vines. This is very important, as the plants then start very slowly compared with what they would if put at once into heat, which weakens the plants to a great extent. As soon as the plants began growing freely they received manure-water liberally until the fruit began to ripen, when it was again discontinued.—*E. Webber, Hall Grove.*"

The Gooseberry Fruit-borer.—The gooseberry moth, Halia Vanaria, which "stings" the gooseberry as our codlin moth perforates apples, is reported to have been particularly destructive this year. The English fruit-eater cannot get along without his gooseberry, and he will have to pay dear for his mouthful this summer.

American Apples in England.—We suppose figures must tell correct tales, and when the English tell us they paid us $3,500,000 for our apples last year we shut our eyes and are thankful.

The Grape Rot.—This disease has been terrible through the grape-growing regions of Virginia. The crop is said to be a total failure. The celebrated French methods have been tried in New Jersey, and found utterly worthless to help the grape-grower; but this may have been from the application not having been given until the little fungus had got fast hold of its victim.

Sorghum Sugar.—Prof. Harvey W. Wiley has been long in the employ of the Agricultural Department at Washington, endeavoring to master the whole subject of sugar from sorghum. He concludes that the formation of sucrose by the plant is only an accidental or adventitious process, and only occurs from waste material. He concludes from this fact that sugar from sorghum will never be an industry that any one can long engage in, as the results will be more or less accidental. Sometimes plants may yield a good percentage of sugar, at other times none at all.—*Independent.*

Asparagus.—The great trouble in England to the asparagus growers seems to be the swarms of rabbits. In America the great trouble is the small beetle which has lately appeared. The European trouble can be overcome by traps, while the American must be done away with by Paris Green.

Protecting Potato from Colorado Beetle.—It is surprising how slow profitable information travels. It is now many years since the Gardeners' Monthly first proposed to destroy the beetle with Paris Green. This has been taken up so generally by the agricultural press, and so generally practiced, that one would suppose that, large as our country is, there is not a corner so obscure that this light has not shined into it.

By the following from a daily paper it seems there are yet some dark places:

"Gathering potato bugs is quite a lucrative business in parts of Virginia, and as high as $2 a day is earned by some of the women engaged in it. Compensation is at the rate of five cents per 'yeast powder' can full of the insects."

There is some hope for intelligence even here, since they possess at least "yeast powder cans." The whole lump will be leavened eventually.

NEW FRUITS & VEGETABLES.

Colored Plates of Fruits.—The June *Horticultural Art Journal* has plates of the Arkansas apple—a very pretty dark red of large size, said to be a first-class variety for the South. The Shannon is another Arkansas apple, large and yellow. The Puyallup Mammoth gooseberry, a variety of the English race, but raised in Oregon; and a very good illustration of the Pocklington grape.

Varieties of Turnip.—It is wonderful to contemplate how great has been the improvement in garden vegetables during the past quarter of a century. There is now so much variety that every class of taste may be suited. The Landreths have issued a colored plate in which are no less than thirteen kinds of various forms, from long like a carrot to a perfect globe. When cooked the taste is as various as the form. The yellows especially have a wholly different flavor from the whites.

SCRAPS AND QUERIES.

Fire Blight in the Pear in Tennessee.—A Jackson, Tennessee, correspondent writes: "I would like to ask you if you can tell me what ails my pear trees. They die back. A small limb will die, and when I cut the dead limb off another dies, and they keep on that way. I am afraid they will all die. If you could tell me what is the matter with them and what to do for them, you would do me a lasting favor, and I should be very much obliged."

[It would appear from this note that the terrible fire blight, so destructive in other regions, has only just made its appearance in this part of the world. This does not indicate any change of climate, electrical conditions, or any of the supposed phenomena so often brought in to account for the disease, for no one will believe there has been any material difference in this respect since the pear was first planted there; but it does show that something has been introduced that was not there during the many years that the pear trees were healthy. This may be such a low-lived organism as the species of bacteria described by Professors Burrill and Arthur. These little plants are somewhat of the nature of the "mildews and moulds" of general literature. They come and go, like that which causes smallpox or yellow fever, no one knows why or how. So far as the pear is concerned, it is some comfort that, like smallpox or yellow fever, its appearance is not regular or persistent. It will sometimes sweep away a whole orchard, and then it may never appear again. It has been, moreover, noted that after it has once appeared with great virulence, it is rarely very bad again in the same locality, at least for a number of years. We cannot say that we know of any protection against the disease, or cure for it after it appears; but you may go on and cut out the diseased branches, or plant new trees in the place of those wholly destroyed, with little fear of being a bad sufferer the second time.—Ed. G. M.]

Pears on the Quince Stock.—A Pittsburg correspondent wants to know why, as pears on the quince stock are so much cheaper, he should not plant them in preference to the more costly standard. We cannot answer the question to our mind, because we do not know the circumstances. But in a general way we may say that for orchard culture few persons would plant anything but Standards. They are generally more enduring, and in a long term of years we believe more profitable. It is to be said to the credit of the pear on quince, however, that it requires more knowledge and skill than on its own roots. People ignorant of all horticultural knowledge should have nothing to do with dwarf pears. Those who are skilful in pruning, and know how to give them plenty of good food and not too much, may beat the standard pear-grower with them. But the number of these good fellows is few.

Large Cherries.—A Germantown correspondent sends us some cherries of Napoleon Biggareau, which he asks through the Monthly whether any larger have been produced of that variety. They measured just three inches round.

Couch Grass.—"C. J. T.," Flora Dale, Pa., says: "Enclosed please find a specimen of grass I have growing upon my farm; it started here several years ago, and has been spreading very rapidly despite my efforts to check its growth. I have one field in corn now, which is the third successive crop, but the 'Devil grass,' (as I call it for the want of a better name) still 'holds the fort;' the roots form a complete mat or net-work, and when allowed to stand unmolested for a year or two, is very difficult to plow or break up; it also crowds everything else out. Neither wheat or any other kind of grass will grow where it has a foothold. Can you tell me its proper name? and do you know of any way to eradicate it? An answer to this question will be appreciated.

"If you cannot answer these questions you perhaps would know to whom to refer them better than I, and I think the American farmer would do well to keep an eye on this pest."

[The Couch grass, Triticum repens. Extremely hard to eradicate when unintelligently attacked, but easily destroyed when pursued with good judgment. About three hoeings when the leaves are young, will destroy the whole crop in a single season. Of course care must be taken not to let a single plant mature leaves, or all the labor will be lost.—Ed. G. M.]

Cultivating Ginseng.—"C. B. R.," Albany, Whiteside co., Ill., referring to the note of "Mrs. E. J. D.," Nicholasville, Ky., desires to know whether an effort to cultivate it in Western North Carolina, might not succeed. He has always had a desire to settle in that part of North Carolina, if he could have an object, and thinks this might be an inducement.

We can can only say, that a few years ago when the Editor was traveling in North Carolina, he was taken in and hospitably entertained for the night at a small house at the foot of Iron Mountain, that had a nice country garden surrounding it. The ginseng was growing well in that garden. There is no doubt it can be cultivated. Whether the cultivated roots would have the same virtues—or supposed virtues of the wild root—ought to be ascertained before much capital is invested. It has been found important in other matters. The Turkish rhubarb, cultivated, has been found far inferior to the imported wild roots. Our correspondent would further like to know what time of the year the roots are collected.

FORESTRY.

COMMUNICATIONS.

SUCCESSION OF FORESTS.

BY R. DOUGLAS.

I don't wonder you get out of patience with this old "chestnut," of oaks coming up in pine forests. I have never seen a pine forest in a climate where oaks can be made to grow that did not have oaks mixed more or less with the pines. If the pine forests are in almost pure sand, or beyond the Northern limit of the oak, no oaks will be found after the pines are cut away.

Darwin says the oaks are driving the pines to the sands, and, as he was a very close observer, a great traveller, and careful not to take statements from others unless they were well authenticated, it would seem that it is much the same in other countries as in this.

If Darwin had said, the fires are driving the pines to the sands, he would have still been right, for, as far as my observations, the pines will hold their own except where fires intervene; even when cut down they will soon reclothe the land.

I remember an old farmer in Vermont telling me in 1838 of how the fires had run into the Green Mountains many years before, and how a different kind or different kinds of timber had sprung up, and he contended—good old soul—that these trees had come up without seeds. I tried to convince him, but it did no good. Unreasonable as the statement was it set me to thinking, and as I have rambled in the woods every opportunity I have had since I was a very small boy, it was not trouble to me to examine these woods and those adjoining. Of course I found trees of the same kinds that had taken possession of these burnt down woods. In California they have the oak region and the pine region. The oaks grow on the foothills and the pines higher up the mountains. Now I remember distinctly, that in crossing the Sierra Nevada mountains and very high—so high that in the afternoon we walked over what seemed to be perpetual snow under the brow of the mountain, and we hurried so as to get over the summit to camp for the night. When we reached the summit it was not quite sunset and the air being very chill we walked about half an hour before we stopped for the night. (There were two of us; our camping was lying down and sleeping in our blankets.) Much as I was hurried I could not help stopping to look at an old oak tree. It was at least a foot through, close to the ground; it might have been 15 or 20 feet long, for it ran almost horizontal, and at the furthest extremity from its base it was so near the ground that I looked over it, standing beside it. It was massed very closely with leaves and literally covered with acorns. I did not notice another oak tree anywhere near it. Now, if a fire has since run through that forest of course there would be oaks growing there now, unless the climate may be too severe since the protection of the pine forest is lacking. Of course there is nothing in this worth publishing.

[Just the material that is worth publishing. We read, a few years since, a paper in a scientific periodical, showing that young oaks and other trees will remain for years under the shade of a pine, making no growth, but putting out a leaf or two, so that in ten or twenty years they would be but a few inches high. Those who believe acorns or other seeds will lie in the ground good for centuries, would never notice these. They would think they were plantains or dandelions, if they had any thought at all. The Editor has seen these things in forests, and doubtless other close observers have. When the pine forest is cut down these little fellows take advantage of the situation to grow right on and crowd out everything else. Then we have a change of forest if the seedlings are there, and no change if they are not there. But people generally love to choose the most mysterious explanations of things—Ed. G. M.]

THE FORESTRY QUESTION.

BY B. E. FERNOW.

As I do not believe that you publish your opinions with a conviction that they cannot be changed, I venture to offer some comment on your position in regard to forestry matters in your last issue.

1. While I agree with you as to the retarding influence which the "silly stuff" that is talked about the connection of rainfall and climate with forest cover, exerts on the promotion of practical forestry, and though the matter of stating or explaining it is often "sorry stuff," the connection nevertheless exists and cannot be talked away so offhand. There is plenty of evidence—and we don't need to go out of our country—to show that the climate, if we understand by it the inter-dependent oscillations of temperature and moisture, is not caused, but locally modified, by the existence of properly distributed forest areas. No doubt the total water-capital of the earth remains the same, forests or no forests, but when and where in its constant circulation it falls to the ground as rain, and how fast it is drained off out of the soil—that is the practically important question; and we know beyond cavil that forest areas do not only depend on, but also influence this distribution of the water-capital.

While it would be unscientific to speak of forests as "attracting rain," this term (which, by the way, I do not find in Prof. Shaler's article) expresses in reality and popularly the action upon the moisture suspended in the atmosphere. This action can be explained without distorting physical laws, by the mechanical barrier which a forest offers to isolation, evaporation and winds. What we do know through observation and scientific experiment is the existence and the manner of influence on all factors of climate, exerted by dense forest areas; what we do not know is the degree and extent of this influence.

2. There is also abundant reason to prompt an assertion that in the United States there is no climate, at least not east of the Rocky Mountains and north of the 35th degree, so dry that forest planting—not tree planting—with proper methods and reasonable regard to existing conditions, would be impossible, though it may not at present be practicable or desirable, and that eventually through change of conditions by efforts of man, no place in the United States will be incapable of bearing forest growth.

Be it not overlooked that the rainfall during the five months, April to August (period of vegetation), in Dodge City, Kansas, averages 16.43 inches; in North Platte, Nebraska, 15.96 inches; while Philadelphia shows only 16.40 inches, and the temperature range during the same period at these places shows no appreciable difference. As soon as the solid phalanx of farmers has moved into the arid regions, and by breaking the soil over large areas has made the precipitation now running off to waste available for soil culture, better conditions for forest growth and with it improved conditions for agriculture will be created.

Man is greater than nature, and can do, has done, and will still more do, more things that nature, at least nature alone, cannot do.

Had we not well authenticated historical evidence and the recent experiences of the prairie States and the Russian steppes, reasoning upon the laws of physical science would lead us to the same conclusion.

While, then, this inter-relation of agricultural conditions and forestry will not perhaps induce private forest planting, it is a proper basis of governmental or communal action and legislation.

3. In regard to the exertions of France in reforestation, as a matter of fact, the French Government has in co-operation with the local communities reforested, within the last twenty-five years, over 250,000 acres of mountain lands at a cost of $30,000,000, the state paying one-half. In addition, 200,000 acres of sand dunes were brought under forest cover. Since the year 1882 the French Forest Department, which exists since 1827, has had in its yearly budget a considerable sum for the "conservation and restoration of mountain districts by reforesting and resodding," and this year's appropriation for this purpose amounts to 3,290,000 francs ($636,000), and for fixing dunes 360,000 francs ($57,900). The total appropriation for the Forest Department amounts in round numbers to $5,000,000.

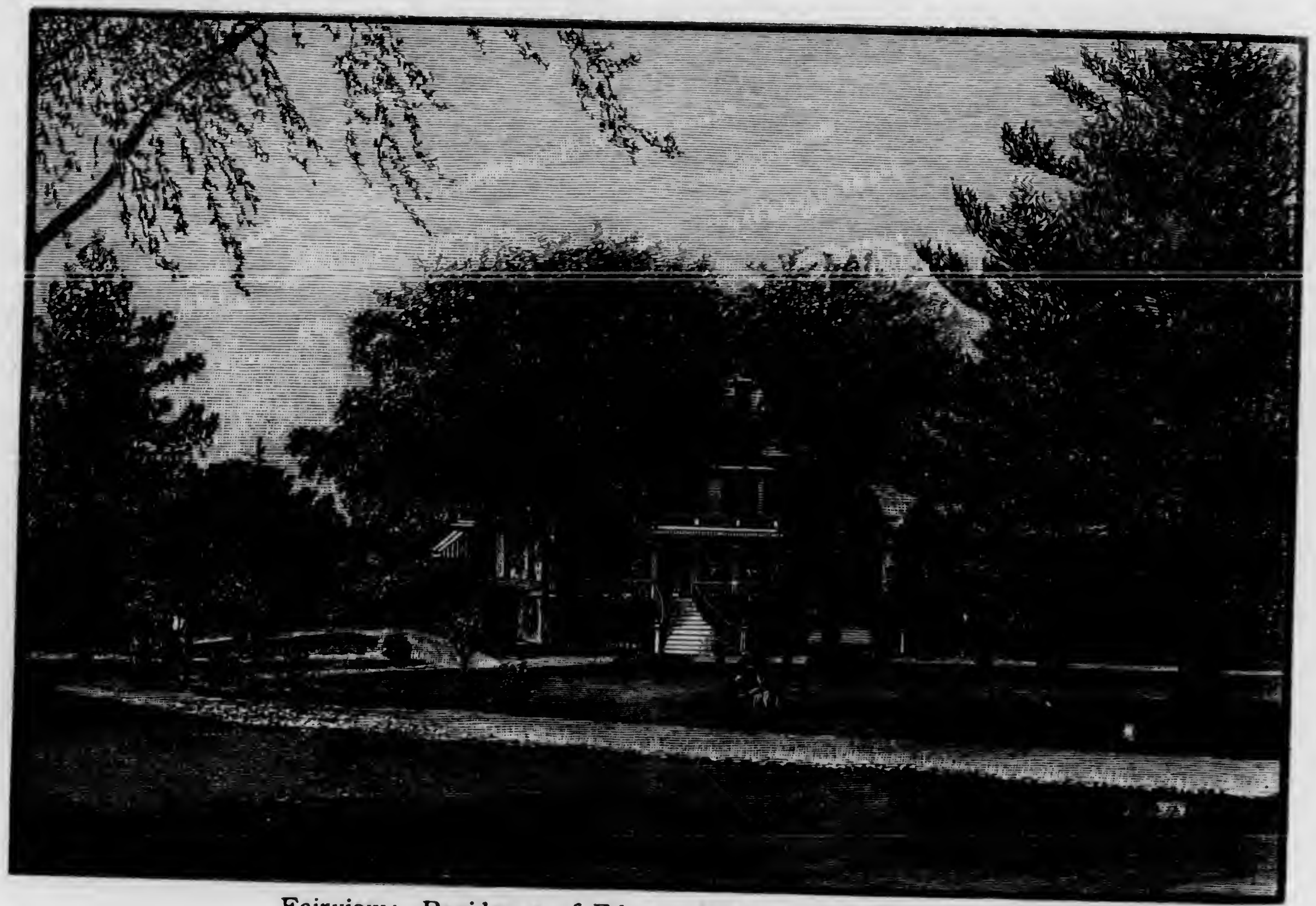
There seems to be more "practical solution" in this than we have been able here to come to.

Chief of Forestry Division, Washington, D. C.

[Certainly the GARDENERS' MONTHLY changes its opinions, when proper facts are presented. So far as Mr. Fernow's letter is concerned, no facts are offered. He tells us that "there is plenty of evidence," "abundant reasons," "well authenticated historical evidence," and so forth, overlooking the fact that these so-called evidences have mostly been shown to be the merest guess-work of a most unscientific character.—Ed. G. M.]

EDITORIAL NOTES.

THE GROWTH OF TIMBER TREES.—The proper distance to plant timber trees apart is the most troublesome question in forest culture. A number of antagonistic economies have to be consulted. For instance, we want a long, clean, straight trunk; so we plant close, in order to check the development of strong side branches. If we did not plant close we should have to do much hand pruning, and this in forestry would not be apt to prove profitable labor. Then, if we plant wide enough to allow of a full development all round, without any hand pruning, the side branches develop to such an extent that only the part below the bottom branch thickens remarkably, and a short dumpy trunk is of little value. Of course for ornamental purposes this is just what we want. The handsome white pine on the residence of Edward Weston, Esq., at Fairview, near Yonkers, gives a picture of beauty in this tree we should never find among the monarchs of the forest—but unfortunately dollars and cents take no note of beauty. As against crowding to get straight, we are by no means sure it would not pay to trim gradually and haul away and destroy the branches in a well conducted system of forestry, because there would be as heavy a cut of timber in thirty-five years as in fifty by the crowding plan, and then by the total absence of dead material there would be absolute security against forest fires. These will be the great questions when the sentimental phases of the forestry agitation pass away. We may argue till we are hoarse about the duty we owe to generations yet unborn, to preserve the country from becoming a howling desert, while we may convert by a single smile if we can only show where some comparatively immediate profits will come in.



Fairview: Residence of Edward Weston, Yonkers, N. Y.

BEST KINDS FOR FOREST PLANTING.—A discussion of some length is going on in our exchanges between Mr. Fernow, Mr. Douglas and the Agricultural Editor of the *Press*, as to the best kinds of trees to plant in American forestry. The questions involved are whether American are better than European trees—whether the White or the Scotch pine should be planted—whether seeds from one locality are better than from another locality. We have been over these subjects so often that our views ought to be well known, and we should not here revert to it only that our attention has been directed to it by one of the

parties to the contest. The only comment we can make is, that it is a subject of too general a character to be decided in special articles. What purposes the timber is to be applied to will decide the kind; soil, latitude, and altitude is another element to be considered, and localities from which seed should be preferred, can come under no rule but "circumstances."

CYPRESS LUMBER.—The Lockland Lumber Company are endeavoring to introduce this for greenhouse sash and rafters, and give the following note on the general value of the timber:

"It grows in groups called 'Brakes,' in the swamps and bayous of most of our Southern States, and under favorable conditions attains an enormous size. The trunk is straight and without limb, often to a height of 75 feet or more, and large trees measure 120 feet in height, and 25 feet and over in circumference above the conical base, which, at the ground, is often three or four times the diameter of the trunk. Authorities disagree as to varieties, some claiming that there are three kinds—red, white or yellow, and black, while others that they take their names from the color of their heart wood, which varies according to soil and conditions. All agree that it is a wood of remarkable durability.

"Its color is of a reddish brown, somewhat resembling our yellow pine, and in weight is somewhat heavier than white pine. No wood that grows in the South so resembles and possesses all the prominent virtues of white pine. This, coupled with the durability of cedar, makes it the favorite wood in the South for all tanks and cisterns, and exposed parts of buildings. It is also much used for inside finish.

"Houses are still standing in good repair that were constructed of this wood 'in toto' more than one hundred years ago.

"In New England and along the sea-coast, it has long been used in the shape of shingles, and is now extensively used for tanks, wooden gutters, etc. That this wood will be extensively used throughout the North when better known there is no doubt."

* * *

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

SOME WILD FLOWERS OF FLORIDA.

BY M. D.

Until recently Middle Florida in my mind was either that portion of the peninsula included between lines projected westward to the Gulf coast from Saint Augustine and Cape Canaverel, or the somewhat larger territory that the 27th and 30th degrees of North latitude would confine. This belief was held without investigation and I now find it to have been quite an incorrect one. Middle Florida, the M. F. of Chapman's Flora of the Southern States, has the Suwanee and Appalachicola rivers as its east and west boundary lines. These rivers flow southwardly from Georgia to the Gulf, enclosing nine entire counties and the capital of the State. The section of the State west of the Appalachicola is West Florida, and that eastward of the Suwanee, and continuing to the Atlantic coast, East Florida. These three divisions together would form North Florida, a term that is not, however, to be found in the work noticed above.

There is also a South Florida, the most frequently mentioned of the four sections, but where it touches upon the division north of it, I cannot from Chapman determine with certainty.

Upon the island of Santa Anastasia, the seaward wall of the harbor of Saint Augustine, there are two shrubs of the order Rhamnaceæ to be found growing, called botanically, Colubrina Americana and Rhamnidium revolutum, and which are said by Chapman to belong to South Florida. For the benefit of those hereafter to use the Chapman volume it would be well to discover whether these buck-thornish shrubs, and perhaps others, are within or without their proper district. If within it they must be at its extreme Northeast corner and might be looked for, and possibly found, still further up the coast.

A third member of the Buckthorn family on the island is the rigid branched Sageretia Michauxii. This shrub has equally rigid spine-like branchlets which grow at right angles to their supports. Such of these branchlets as bear flower spikes are from three to four inches in length, whilst the leaf-bearers are from one to two inches and beneath or below the others.

The nearly ovate, small, shining, acute, finely serrate and persistent leaves of the principal stem or stems, are oppositely set, whilst the leaf and spike covered branchlets occur alternately. The plant is a sand and coast lover and grows as far northward as North Carolina. It would make an aggravating little hedge, spreading low and broadly as it does, or a first-rate dog, cat and chicken proof section to a fence of barbed wire which would be impassable by man and cattle above. Florida nurserymen should look it up. The Rhamnidium has stiff gray branches and branchlets with small oval-oblong leaves that have distinctly revolute edges. The leaves of Colubrina Americana are thick, longish, dark green and shining above with a white woolly or rust colored surface below. At base these leaves are wedge-shaped and at apex obtuse and mucronate. The shrub is grayish throughout—has that general look—and would with No. 2 appear well and do serviceable work as a protecting and ornamental wall to a Florida garden.

VITALITY OF SEEDS.

BY DUDLEY W. ADAMS.

In the MONTHLY for June is some interesting talk about the vitality of seeds.

We know that under certain circumstances seeds will retain their vitality much longer than others. What the most perfect conditions are is not yet fully understood. Doubtless seeds may be and often are preserved in the ground under conditions widely at variance with the modes we usually adopt for the same purpose. I have in mind now an instance of radish seed remaining several years in the ground, and then grow vigorously. These are the circumstances:

In 1854 I broke a piece of virgin soil in Iowa, and the following spring planted thereon a garden. Among the vegetables were some long red radish. We used all we wanted and many ripened seed. Next spring, and for many successive springs, these self-sown seeds and their descendants gave us our early radishes.

About 1855 I received some chestnuts from Massachusetts and planted them in that part of the garden. Chestnuts and radishes got along together very well for a few years, as I left only two trees where the seed was planted.

After awhile the chestnut trees took possession, and I made a fine blue grass sod under and around them, thus, as I supposed, disposing of my old radishes for good. This sod and shade was a pleasant oasis in the garden, and was very much patronized in summer days. However, one of those phenomenally cold waves that sometimes sweep over that country, struck my cherished chestnut trees and killed them both to the ground. I don't remember their age, but I remember one was fourteen inches in diameter in the smallest part of the trunk.

While the chestnut was reaching that size all the ground was in tough sod and no radishes ever showed. When the chestnuts were killed I grubbed them up root and branch, and spaded up the sod to be again used for garden purposes. To my astonishment my old long red radish of olden time promptly put in its appearance in full vigor and apparently undiminished numbers.

Another time I broke up a timothy and blue grass meadow which had been mown for seventeen years. It was as clean a meadow as one need wish. It was broken deeply and nicely inverted. In a few days it was all over green with seedlings of the wild buckwheat that had infested the field seventeen years before. *Tangerine, Fla.*

[Our readers must have noted that the Editor often questions the value of evidence, even when given in favor of matters that he heartily believes in. And the reason for this is, that no cause is served by a bad argument. On the question of the vitality of seeds and plants under certain circumstances, the Editor has no doubt that vital power may be kept for centuries. His paper, a few years ago on the plants connected with the glaciers of Alaska, shows good reason for believing that the plants which spring up in the wake of a melting glacier are the self-same plants covered by a sudden ice sheet perhaps a hundred years before.

But much of the evidence offered for longevity, is very weak, as in the case of the mummy wheat, acorns in pine forests, etc., which has been reflected on in our pages. Let us weed these weaklings out.

Mr. Adams' note on the radish seed is one of these strong points that will confirm the faith of the believers. A chestnut tree of the size noted would in that part of the world have increased about a half an inch a year, and it would be about twenty eight years old, so we may conclude the radish seed had been in the soil that many years. We believe this fact may be placed to the credit of true science.

The wild buckwheat is not so strong a point, for, though nothing is more likely than that the seed was also there, it is just possible that little plants a half inch high may have grown and borne seed among the timothy unobserved. Such things will be.

A good case was recently reported to us similar to the radish case. A brother of the Editor never grew a martynia in his garden, though some people are fond of cultivating them for pickles. He filled up a part of his garden by earth from an old one where the martynia was grown. A large number of them came as weeds the following year; and a gradually reduced number appeared for six years after.

There is evident truth in the old saying that "one year's seeding gives seven years' weeding," and most likely twice or thrice seven, or more.

This is one of the scientific questions which has a great practical bearing and well worth the careful sifting of all evidence offered—Ed. G. M.]

HYBRID PEACHES AND PLUMS.

BY T. V. MUNSON.

Enclosed I send you a problem in botany, only leaves of common and well known species of Prunus and Amygdalus. Each is numbered. Will you tell in the GARDENERS' MONTHLY to which genus each belongs, with reasons assigned why you so classify each, giving the numbers?

I trust you will not consider me impertinent or desirous of putting you to an unreasonable test, as you often have given your opinion through your journal as to what species certain plants belong, of which specimen parts were sent you, even of rare species, and in genera where many other species exist. In this case there is the difference of a genus, and specimens of each considered growing everywhere to compare with these specimens, which are collected from trees here well known to me, and the female parents are always given definite classification by botanists. It is a reasonable and simple problem I propose, hence I offer it in earnest and for a purpose—to develop the important facts which are embodied in it.

After your answer I propose to write a full explanation, etc., of specimens, giving their history in a brief way, which I feel sure you will be pleased to publish. When we have discussed the problem thoroughly, I feel confident it will be solved to the entire satisfaction of everyone, whereas it now stands in a doubtful light, and that, too, embodying a very important principle. If I am in error, I am perfectly willing to endure the correction publicly, as publicly I have been put in the light of probably being incorrect in the matter. As for yourself, you occupy such a position—"on the fence," as it were—that you can gracefully drop either way the facts may point. I know you love candor, and that is just the treatment I will get at your hands.

This method of treatment will elicit unusual attention, and thus excite observation more keenly in such matters.

The exercises of the first regular annual meeting of the Texas State Horticultural Society will take place at Tyler, Texas, July 27th and 28th next. Prospects fine for a large meeting.

Denison, Texas.

[No botanist would admit a test of this kind. Leaves are so often alike that not only distinct genera, but even distinct natural orders, could not be detected. The leaves of Anemone Pennsylvanica (Ranunculaceæ) mixed with Geranium maculatum (Geraniaceæ) would puzzle an expert to separate. Yet, as our correspondent says, we do sometimes manage to give people names of plants on the merest fragments. Still we are not surprised, when we venture on this dangerous ground, to be tripped.

Even now when we say that of the nineteen leaves sent only Nos. 16 and 17 are peaches, and all the others plums, it would not at all surprise us to be told that the laugh comes in against us.

The friendly invitation is highly appreciated. It is, however, not so easy to do two days' work in one, in order to escape continuous daily duties, as it used to be. So the pleasure of acceptance cannot be enjoyed.—Ed. G. M.]

EDITORIAL NOTES.

DOWNINGIA.—This pretty annual, named after our famous Downing, and often grown in gardens under the erroneous name of Clintonia, seems likely to be reduced to the old genus Lobelia. A new species has been discovered, named by Greene D. concolor, which he says "has a cleft corolla, too much like Lobelia."

BEHRIA.—A new genus of the lily family has been named by Professor Greene in honor of the well known and enthusiastic California botanist, Dr. Herman Behr, of San Francisco. It has some relationship to Brodiæa and Triteleia, well known bulbs.

Strange to say, all that is known of it is from a fragment preserved in the herbarium of the California Academy, where it has been for perhaps twenty years. It has scarlet flowers, and appears to have been gathered at Cape St. Lucas or thereabouts. The search for more will give zest to plant collecting in California.

SCRAPS AND QUERIES.

APHYLLON FASCICULATUM.—Mr. W. L. Morris of Des Moines, Iowa, sends fine specimens of this pretty root parasite, which is closely allied to the Broom-rapes of Europe, growing on zonale geraniums in pots, that were cuttings last October. As the seeds have to sprout, take hold, grow and flower and produce seed within six months, it proves that the plant is an annual of very rapid growth. Some were on the young roots—and one on the main stem of the cutting, which, though under ground is scarcely a root.

WILD FLOWERS OF NEVADA.—A lady writing from Franktown says: "I have found our wild flowers do not grow in cultivation, with a few exceptions. I have lifted them, earth and plant, and planted in flower beds not far distant, and some just died, others would grow for a time and disappear. Here is a list of kinds that have grown with me: 1. Mimulus Lewisi. 2. A blue Larkspur, flowers in early spring, then seeds and disappears till spring again. 3. A pale lilac, or white primrose, flowers early spring and disappears till spring again. 4. A plant with flowers like chicory, grows tall and is rather showy. 5. Mimulus Rorlii. 6. M. Cardinalis. The Habenaria leucostachys grew for a time in the flower-beds and seeded. Now grows fine in the thick grass below the beds, just as cowslips do in the old country.

We have had a very changeable spring. And I think the codling moth is disposed of, as the frost killed the apple and pear blooms. We had cleaned and burned all trash in and around the orchard, as we found the cocoon of the moth in old boards, boxes and anything they could get cover in, and were keeping them down; but I hope this frost will finish them. It is quite a loss and very discouraging. We have two orchards, one old one of about 1,100 trees, and a younger one of about 800 trees. It is eight years, I think, since the apples were killed; before the thermometer was down to 18° below freezing point, before they were killed. A neighbor burned wood round the orchard all night, and we think his is a little worse killed than ours. Currants, gooseberries and strawberries were only slightly hurt, and some cherry bloom escaped.

We had a very severe shock of earthquake on the night of the 3d of June, about three o'clock. The loud rumbling wakened us up. When the old earth ceases to feel solid it is a little frightensome. It is eighteen years since we had an earthquake more than a slight wave before. This one was very severe south of this place, but no one hurt.

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

RED AND WHITE ROSES.—

Roses the lover gives to his love;
Roses we lay on the breast of death
That nevermore fondest whisper can move—
Which is the sweeter, answer and prove,
Passionate love, or sleep without breath?

For love you burn with a crimson fire,
For death you are pale as the winter's snow;
Warm for the one, with the heart's desire,
Cold for the other, since hopes expire—
Which is the sweeter? When shall we know?

—*Louise Chandler Moulton, in Independent.*

FLOWERS OF LITERATURE.—Literary expressions are often ridiculous when measured by common sense. In a work on architecture, now before us, from the pen of a distinguished Boston gentleman, we read that "in the seventeenth century, when the American wilderness was beginning to blossom under the feet of the European colonists, there existed" &c. It so happens, in fact, that the American wilderness blossomed long before the colonist put his foot on it; indeed some of the most famous of American flowers blossom in the said wilderness, where no man's foot-prints show; and in any event just how a plant or even a wilderness, is to blossom under a foot—though the foot of an European colonist—is hard to comprehend. "Keep your feet off the grass" is a good sign in some gardens; and might be useful in such rhetoric as this.

THE ARBUTUS.—Our Trailing Arbutus is not the Arbutus of the ancients—nor indeed by modern botanists would it be regarded as an Arbutus at all—but its relationship to the famous Arbutus of the ancients gives an interest to the "folk lore" of the family. According to Mr. R. Folkard, the tree is one of great antiquity, for he informs us in his book on Plant Lore, &c., that it was held sacred by the Romans. "It was one of the attributes of Cardea, a sister of Apollo, who was beloved by Janus, guardian of gates and avenues. With a rod of Arbutus, Cardea drove away witches, and protected little children when ill or bewitched. The Romans employed the Arbutus, with other symbolic trees and flowers, at the Palila, a festival held in honor of the pastoral goddess Pales. It was a Roman custom to deposit branches of the Arbutus on coffins; and Virgil tells us that Arbutus rods and oak twigs formed the bier of young Pallas the son of Evander. Horace, in his Odes, has celebrated the shade afforded by the Arbutus. Ovid speaks of the tree as 'the Arbutus heavy with its ruby fruit,' and tells us that in the golden age, the fruit afforded food to man. This fruit is called unedo, and Pliny is stated to have given it that name because it was so bitter, 'that he who ate one would eat no more.' But I have met with people who eat the fruit and appear to like it. Some of the most fruitful specimens of this shrub I have ever seen, were growing on elevated positions, which appeared to suit it exactly."

FLORAL CONFORMATION OF THE GENUS CYPRIPEDIUM.—Dr. M. T. Masters, the author of the interesting work "Teratology" which treats of vegetable malformations, has given us a treatise much of this character, on Cypripedium, in which those who make an intelligent study of orchids, will find much to interest them.

NAMES OF CHRYSANTHEMUMS.—A correspondent of the *Gardeners' Magazine*, referring to the superior culture of American growers, adds:

"Before leaving the American growers, there is an interesting subject worthy of mention. They grow seedlings from home-saved seed. One enterprising firm of nurserymen offer prizes for the best results, but on condition that the winning varieties become their property, and that the flowers must be improvements upon existing forms in the various sections. The successful competitors have the right to name their productions, and as the climate is apparently suitable for the purpose, raisers of new chrysanthemums are likely to become rather numerous.

"Naming the flowers! by no means an unimportant matter to some of us, especially those connected with the business of cataloguing. Speaking from comparatively recent experience, I would earnestly implore the fortunate American prize-winners in this class to make the nomenclature of their flowers as short and as sweet as possible. Pray let us have no more of the long-winded names such as the lively Gaul delights in. No more like Triomphe de la rue Châlets, L'ami Boucharlat ainé, Madame la Marquise de Mun, Monsieur Juan Cruz de Eguileor, Secrétaire Général F. Astié, Souvenir de l'amiral Courbet, or even any other souvenirs of that ilk."

AMERICAN BEAUTY ROSE.—Mr. Fr. Harms, of Hamburg, repeats in the May issue of the *Journal des Roses* that he is satisfied that Madame Ferdinand Jamain "ne plaisit pas ici" (no good here), and that the penstroke of an American speculator in calling it American Beauty is its chief merit. Mr. Harms has no objection to the "Impressario" of an opera praising "the young and beautiful charms" of an antiquated prima donna; bnt he says he dislikes these ancient beauties among roses being sent off as fresh virgin rose buds, and hence his opposition.

LATIN NAMES FOR GARDEN VARIETIES.—The English garden folk, who insisted on changing the name of our Arbor Vitæ, Tom Thumb, to Thuja Ellwangeriana, and Geo. Peabody to T. aurea elegantissima, and we do not know what, are now about tired of Latin names, and are trying to come to our plain ways in these cases. Hereafter all garden varieties are to have English and no more Latin names. Botanical species will, of course, continue to have their Latin names used as before.

LADIES IN THE AMERICAN PHILOSOPHICAL SOCIETY.—This learned society has at length followed in the wake of similar institutions, and has elected a lady to full membership in the society. On the 20th of May Miss Helen C. de Silver Abbott was duly elected. It would have been too bad for a society founded by Benjamin Franklin to have held back in this line of progress.

Miss Abbott, by virtue of her eminence in botanical chemistry, gives quite as much honor to the society which elects her as the society confers by its action.

NEW YORK FLORISTS' CLUB.—New York florists have followed the example of their Philadelphia and Chicago brethren, and have founded a social club. John May has been elected President, C. L. Allen, Secretary, and Peter Henderson, Treasurer.

MIDDLEMEN AMONG FLORISTS.—A large number of the English growers, becoming dissatisfied with the plan of sending to Covent Garden commission men, who they thought had too many losses of flowers, and too large commission on what they did sell, started the plan last year to employ a person to make their own sales by auction on the morning of each day. The experiment of the season resulted in showing that they got only about one-half of what they would have done had they continued the old plan of commission men.

WILSON, THE ORNITHOLOGIST.—In the *School Monthly*, a meritorious publication, edited by the grammar school boys of Germantown, in aid of a fund to establish a public school library, we find the following anecdote of Wilson, the famous ornithologist and poet, in connection with the history of the Ellwood Public School:

> "Alexander Wilson, the ornithologist, taught from 1807 to 1808, when he was succeeded by his nephew, William Duncan, until January, 1809, when the Rev. John Bachman, from Rensselaer county, New York, a divinity student, by persuasion of Wilson taught the school one year. He afterward settled at Charleston, S. C., where he remained pastor of St. John's Lutheran Church fifty-five years, dying in 1867 at an advanced age. Wilson had a class in botany while he taught here; he also spent his leisure time with his pupils in collecting specimens, drawings of which were preserved for a long time among those he taught, some of which are still extant."

CALEB COPE.—Those who look back over the literature of horticulture thirty or forty years ago, will find this estimable gentleman among the leading amateurs in American horticulture. He was long President of the Pennsylvania Horticultural Society in its most flourishing days. The Victoria lily flowered for the first time at his princely residence at Springbrook, and thousands flocked from all parts of the Union to see its unparalleled beauty. Temporary business reverses, led him from his great pleasures, and Springbrook was sold. It is now the Forrest Home. With recovery from his brief financial losses, he purchased a beautiful property at Chestnut Hill, where he has for many years past still fostered his early gardening love. The same public spirited generosity which, by its free public use made Springbrook famous, still obtains; and the community have the free use of Mr. Cope's grounds. We are sure it will gratify his numerous friends to know that on the 18th of July he passed his 90th birthday, with a fair promise that for some years yet he will still remain with us, the munificent patron of gardening he has always been.

CHARLES A. KEFFER.—This gentleman, formerly of the nursery firm of Lawrence & Keffer, of Lemars, Iowa, has been elected Professor of Horticulture in Dakota Agricultural College.

MR. FELL.—This gentleman, who has been travelling in this country in the interest of Mr. Ware, of Tottenham, England, has returned after a journey of a month. He is a very intelligent gentleman, and made many friends during his visit.

DR. D. W. BEADLE.—This esteemed horticulturist, who has done so much for pomology all over the country as well as Canada, retired from the editorship of the Canadian *Horticulturist* at the beginning of the year. Mr. C. Woolverton, Grimsby, Ontario, now is the editor.

JOHN THORP.—The well known New York florist has secured fourteen acres at Cedarhurst, and will put up sixteen large greenhouses at once thereon.

QUEEN NATALIE.—The Queen or ex-Queen of Servia, is said to be a great lover of gardening. She is a Russian by birth, and most of the educated ladies of that country have a fondness for gardening.

DR. ASA GRAY.—No one can surpass Dr. Sandys in the felicity with which he presents the distinguished men whom Cambridge University honors with its highest degrees. Among those who received the degree of Doctor of Laws, June 20th, was Prof. Asa Gray, now in England. Dr. Sandys said (we translate from the exquisite Latin): "And now we are glad to come to the Harvard professor of Natural History, *facile princeps* of transatlantic botanists. Within the period of fifty years how many books has he written about his fairest science, how rich in learning, how admirable in style! How many times has he crossed the ocean that he might more carefully study European herbaria, and better know the leading men in his own department! In examining, reviewing, and sometimes gracefully correcting the labors of others, what a shrewd, honest and urbane critic has he proved himself to be! How cheerfully, many years ago, among his own Western countrymen was he the first of all to greet the rising sun of our own Darwin, believing his theory of the origin of various forms of life demanded some First Cause, and was in harmony with a faith in a Deity who has created and governs all things! God grant that it may be allowed to such a man at length to carry to a happy completion that great work, which he long ago began, of more accurately describing the Flora of North America! Meanwhile, this man who has so long adorned his fair science by his labors and his life, even unto a hoary age, 'bearing,' as our poet says, 'the white blossom of a blameless life,' him, I say, we gladly crown, at least with these flowerets of praise, with this corolla of honor [*his saltem laudis flosculis, hac saltem honoris corolla, libenter coronamus*]. For many, many years may Asa Gray, the venerable priest of Flora, render more illustrious this academic crown!"—*Independent.*

THE ESTABLISHMENT OF LOUIS MENAND & SONS, ALBANY, N. Y.—Some of the most enterprising florists in the United States are in Albany, though their good work seldom gets into the pages of horticultural literature. Among the oldest of these excellent establishments is that of Louis Menand and Sons.

The conservatory of the venerable Louis Menand, is situated at Menand's Station near Albany. He was born in Chalons, Burgundy, and came to New York in 1837, with the intention of making his residence in Cuba. But that city pleased him and he determined to remain in this country. After a residence of five years in New York, he went to Albany in 1842, and began business as a florist in the store now occupied by Ridgway & Russ in Van Vecthen Hall. Soon afterwards he hired the property now known as the Home for Aged Men on the Troy road, and erected a small greenhouse. After he had removed his plants, one night in March, the weather became suddenly cold and they were in danger of freezing, as the room was supplied with a rickety stove but no wood. The change occurred before daylight and after seeking in vain for wood on the premises, Mr. Menand was obliged to forage on a neighbor's wood pile or lose his plants. He did not wish to awaken them at such an hour, and therefore he helped himself to wood. The next day he informed the neighbor of his involuntary theft, and the owner was inclined to resent the act; but upon being offered the price of a cord of wood his wrath was appeased.

This incident is related to show from what small beginnings the industrious and intelligent Frenchman has succeeded in making his name known in Europe and America as one of the most successful florists of the age. His next venture was to purchase, first, four acres and afterwards three acres more at what is now Menand's Station, which he built upon and occupied in 1847. He has resided continuously at this place from that day to this, a period of nearly forty years; and it is here that he has acquired his reputation for his extensive knowledge of the products of the vegetable kingdom, not merely as a florist but also as a botanist who is as well posted as many of the professors of the science.

Mr. Menand's greenhouses are four in number, and consist of eight divisions. These are devoted to the cultivation of exotics of all varieties, almost exclusively. They consist of orchids, camellias, palm ferns, crotons, cacti, bromeliaceous plants, etc.

Of course a mere enumeration like this conveys a very faint idea of the extent, rarity and beauty of his collection, because he has many varieties of the different species. Although the houses are not extraordinary in size, they contain as great a variety of plant specimens as any half dozen houses in the city of New York. The casual observer would not discover this fact, but the botanist would find here enough to occupy his attention for a week. Prof. Gray, the great botanist of Boston, who visited these houses twenty years ago, said that he found here specimens that he could not find in the botanical gardens in that city. He has plants that he does not sell one of in twenty-five years, which fact shows that Mr. Menand grows his plants not alone for profit, but because of his love for his profession. For thirty years past he has imported plants twice a year from France, England and Belgium. By this means he secures plants of every variety that are desirable for florists, as there are establishments in those countries that furnish plants from all parts of the world. It is Mr. Menand's aim to exhibit at least one specimen of every known variety; and whenever a new one is produced in any quarter of the world, it will not be long before it may be found at Menand's. Thus it often happens that persons who search in vain for rare specimens in New York and elsewhere, are generally directed to "a crazy Frenchman at Albany," where they are sure to find what they want and carry it away, provided their purse is long enough. In fact, it is Mr. Menand's aim to furnish anything from a strawberry to a tree. His shade and fruit trees, grapes, etc., were formerly the chief features of his business; now the demand for these is insignificant. Then came the popular demand for camellias, and a little plant four inches high would sell for $25. But fashion impertinently brought these lovely flowers into disrepute, and the craze for orchids arrived. Of these he now has 150 species and about 1,000 plants. They put forth their curious flower forms and lovely blooms in greatest abundance during February, March and April; but he has specimens in bloom all the year round. Just now his conservatories are not in full flower in any of the rare varieties; but the orchids generally are getting ready to show their wonderful products, his azaleas are beginning to bud, and many other flowering varieties will soon be in full bloom. But so long as this veteran enthusiast lives, the chief attraction will be the rarity and variety of the exotics to the cultivation of which his intelligent labors have been devoted for the last half of a century.

The Cemetery Branch.—In 1870 Mr. Menand purchased thirty-one acres of land near the entrance to the Rural cemetery, on which are now the residence of his son Louis, and a half dozen hot-houses. These houses are devoted mostly to the cultivation of cut flowers, roses, carnations, pansies, geraniums, etc., and have also a large number of exotics.

The cemetery branch is devoted largely to furnishing plants for decorating lots in the Rural and St. Agnes cemeteries. Among the exotics in these houses are the Sago, Australian and Brazilian palms, many varieties of the highly ornamental Japan plants, such as aralias, flax, euonymus, hydrangeas, etc.; a great variety of the Mexican agaves, including the beautiful filifera and the Verschaffelti, (which bloomed the past season with a flowering spike fourteen feet high) and an almost endless variety of other species suitable for cemetery decoration. Among the hardy foreign shrubs are many dwarf evergreens, the Abies nigra, pendula conica, the weeping birch, elm, beech, willow, etc. This house makes a specialty of these and other deciduous and herbaceous garden plants for cemetery purposes, and visitors to the cemetery readily distinguish the lots in charge of L. Menand & Sons by the beauty of this variety of plants, both for bedding purposes and for vases.

Among the flowering plants now in bloom are roses, in variety and of rare beauty, camellias, carnations, violets, Roman hyacinths, narcissus (a variety of the latter which is worshipped by the Chinese on New Year's day). One of their houses is devoted entirely to roses, and though now very beautiful, they will not be in full bloom until February. Another house is devoted entirely to carnations, another to violets, another to smilax, another to tropical plants, and others to miscellaneous plants. Their principal winter business is in furnishing cut flowers for weddings, parties, funerals, etc., and they supply a branch house in Troy where they keep a display of plants and flowers.

The following are the names of employees at the cemetery branch: L. Menand, Jr., manager; Geo. Lambrook, Jr., foreman and designer; F. Lambrook, C. Sullivan, J. Murnane, P. Maney, P. Hanan, W. Mawney. At this place in the spring and summer from ten to twenty men are employed. The following are employed at Menand Station: J. Hayes, foreman; P. Hayes, M. Flinn, T. Connors, M. O'Donnell. In the spring and summer about ten men are employed. Felix Menand, manager Troy branch, John Fort, clerk.

NICHOLS & LORTON.—Davenport, Iowa. These well known nurseries were started in 1858 by Mr. Nichols. Mr. Lorton entered in 1865. The beginning was two and one-half acres, which has extended to three hundred now. Fruit trees receive the chief attention. At the present time they have about 250,000 apple trees, 50,000 two-year cherries, 75,000 one-year, 200,000 grapes, besides pears and small fruits. 2,500,000 stocks of various kinds are to be budded this year. They have winter storage houses running 300 feet, with 200 feet of packing sheds. The business employs an average of sixty men throughout the year. The sales are about $100,000 a year.

DR. EZRA MICHENER.—Among the deaths recently announced is this famous botanist of Chester county, Pennsylvania. He was one of the contemporaries of the celebrated Dr. Darlington, who, in his "Flora Cestrica" refers often to his labors. He was also well known as the author of a "Manual of Weeds," and has been an occasional contributor to our pages.

JEAN BAPTISTE BOUSSINGAULT.—We recently noted the telegraphic news of the death of this distinguished agricultural chemist. Our exchanges give a fuller account of his life and services which we annex:

"This eminent and veteran French chemist, whose death we recorded in our last issue, has special claims on our memories, for, without in any way forgetting or detracting from the merits of other workers in the same branch of inquiry, he fairly deserves the title of the father of chemical research in relation to the life and nutrition of plants under cultivation. His labors were practically ended before the present generation came into existence, for he was born in 1802, and published his first contribution to chemical knowledge in 1821. Therefore, like most original investigators, he began work early in life. He was educated at the St. Etienne School of Mines, and subsequently went to South America, under the auspices of an English company, in order, it is stated, to discover the ancient mines, the existence of which was a notable tradition.

"He did not succeed in finding wealth for his company, but, like Humboldt, who preceded him, he collected facts and materials sufficient for a life's study. In South America his explorations were mainly confined to Bolivia and Venezuela. On returning to France he was named Professor of Chemistry to the Lyons Faculty of Sciences."

CHARLES ALDEN.—Possibly one of the greatest of all benefits to American fruit growers, came in with the invention of the Alden Fruit Driers. Alden made some $60,000 by his invention. He subsequently lost all, retired to the almshouse in Randolph, Mass., where he committed suicide on the 26th of June. He was in his 76th year.

DIE ERZIEHUNG DER PFLANZEN AUS SAMEN (THE RAISING OF PLANTS FROM SEED).—By H. Jager. Published by Ernst Benary, Erfurt, Germany. 1887.

This is a large octavo, 422 pages, gotten up with that completeness which has made German literature famous all over the world. The great range covered may be inferred from the fact that the index shows 1,677 plants and topics, considered in the body of the work. An extract at random from this index shows the character of the reading matter: "Fraxinus, Fremontia, Frenela, Fritillaria, Fuchsia, Fuchs-schwanz, Funkia, Furcæa, Futterkohle, Futter-ruben." It is impossible to give even a faint idea of the immense amount of information contained in this book, because much of it is given in a tabulated form easy for reference, and of course gives the information complete, though in a condensed way. We can thus learn in a moment all about any plant grown in gardens. If you have one only known by its name, the table tells you by a star the natural order to which it belongs, whether it is a hardy greenhouse or a hot-house plant, the kind of soil it likes for sowing, the season it flowers in, whether it is good for cutting, or whether it is dwarf or tall, or of peculiar habits, whether it is valued chiefly for blossom or fruit, and whether the plant itself is or is not a good market plant. All of this information is given by stars; but besides is a type description of the information on each plant noted which stars can not convey. It is undoubtedly the most valuable work on this subject that has ever been issued, and it will almost pay those of our readers who do not read German to take a course of instruction in the language in order to read this book. It need not, however, be confined to our German speaking readers, for very much of the tabulated matter referred to can soon be mastered by any one, and a considerable amount of information be obtained even where one is unable to read the full text.

COMBINATION FORCE PUMPS.—Mr. P. C. Lewis, of Catskill, New York, sends one of these. It serves the many purposes required in the use of liquids in the farm or garden, whether as a simple syringe, or garden engine. In trying it we found it sent a stream 50 feet high. For spraying poison over fruit or ornamental trees that are attacked by insects, it is a very timely invention. Owners of gardens will all find good use for them.

CATALOGUES.—Dreer, H. A., Midsummer List, Phila.; Ellwanger & Barry, Strawberry Price List, Rochester, N. Y.; Hubert & Mauger, Guernsey Bulbs and Plants, Isle of Guernsey; Krelage, E. H. & Son, Bulbs and Flower Catalogue, Haarlem, Holland; Meehan, Thos. & Son, Strawberry Circular, Germantown, Phila.; Perkins, J. N., Florists' Flower Pots, Syracuse, N. Y.; Smiths, Powell & Lamb, Holstein Butter Records, Syracuse, N. Y.; Thomas, Jos. W., Fruit and Ornamental, King of Prussia, Pa.; Williams, B. S., New Plant Catalogue, Upper Holloway, London, England.

SCRAPS AND QUERIES.

FLORISTS IN SUBURBAN VILLAGES.—The *American Florist* takes especial pains to inform "Mr. Meehan" that in the vicinity of New York there are villages in which reside florists who raise flowers for the New York market. The information so kindly offered might be reciprocated by the GARDENERS' MONTHLY informing "Mr. Vaughan, Mr. Thorpe, or the gentlemanly clerk who prepared the aforesaid item," that there are also villages in the vicinity of Boston, Philadelphia and Baltimore, though possibly not near Chicago, in which reside florists who do just that same thing.

WHAT IS A VINE.—"G. A. L.," Bryn Mawr, Pa., says: "I take the liberty of asking a botanical question, as I have been kindly referred to you as authority. I desire to obtain the technical and scientific botanical meaning of the word 'Vine.' In botany is 'Vine' the grape-vine, or an application of the name to all climbing, creeping and trailing plants as a designation for convenience only? Is the vine the grape, and not any other? Is the grape-vine the only true vine in botany?

"Any information on this point which you can give me will be very gratefully received."

[If we say "the vine," as a term in classical literature, the word is confined strictly to the grape-vine. In strict botanical terminology, the word "vine" has no place. It is, however, custom that gives law to language, and thus, in common botanical language the word has come to mean any weak stem unable to support itself. Thus we have climbing vine, creeping vine, trailing vine, potato vine, and even tomato vine. It is correct from a conventional point of view, though scarcely botanical science.—Ed. G. M.]

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

SOCIETY OF AMERICAN FLORISTS.—The Florists' Convention at Chicago, commencing August 16th, will, besides the address of so intelligent a gentleman as President Craig, a paper on hybridization by John Thorp, on "Fungoid diseases"—that is to say—fungal diseases, by C. L. Allen, and on orchids by H. A. Siebrecht. F. R. Pierson is to talk of business methods. Roses will get great attention from the essayists. Summer propagation and best varieties, by Mr. E. G. Hill; Charles Saunderson, Roses on Stocks. Mr. Ernst Asmus will speak on forcing bulbs, and Mr. Jackson Dawson on forcing shrubs. Mr. J. W. Elliott gives a paper on Art in Floral-work, and a paper will be read from Mr. W. R. Smith, of Botanic Gardens, Washington, on some subject not announced. Mr. J. M. Jordan, of St. Louis, is to give some idea of cut flowers as a retail business. The members also expect to get into hot water over the heating question. In relation to getting to Chicago, Mr. Lonsdale, the secretary, says:

"The railroads generally have offered a rate and a third. That is to say, a full fare must be paid to Chicago and the reduction is made on the return trip on the presentation of a certificate duly signed, etc.

"*Take Note:*—When purchasing tickets for Chicago, get the local ticket agent's certificate, with railroad stamp affixed, certifying that full fare has been paid to Chicago. This is necessary in case the members or delegates for any reason forget or fail to produce regular certificates."

MASS. HORTICULTURAL SOCIETY.—The income of the society last year was $53,930.96. Almost the whole of this is from investments, only $1,078 being from members, and $2,329.16 admission charges, less expenses. $600 came from the State. $30,000 of the income goes to pay interest on mortgage; $4,562.28 were paid for prizes. The real estate and personal property of the society is appraised at $290,086.20. There are 576 life members; fifteen were added, and the deaths of thirty-one reported last year. Annual members 256; twelve new ones added and twenty-four lost during the year. The mortgage debt was reduced $30,000 last year.

THE GEORGIA STATE HORTICULTURAL SOCIETY.—We learn from President Berckmans that a meeting will be held at Dalton, on the 4th, 5th, and 6th of August; on the 9th and 10th the State Agricultural Society will have its annual fair at Canton. The Georgia Central, W. & A., S. F. & W. Railroads, have generously agreed to pass all members free over their lines of road. The Southern Express Company will, as usual, extend free transportation to all packages of fruits, vegetables, and flowers intended for exhibition. The occasion promises to be a memorable one for Southern horticulture, and we are sorry we had not our attention called to it a month earlier.

OBSERVATION ON THE MONTHLY INCREASE IN GIRTH OF TREES AT THE ROYAL BOTANIC GARDEN.—Dr. David Christison, at the April 14th meeting of the Edinburgh Botanical Society, gave the results of monthly measurements of different species of deciduous and evergreen trees in the Edinburgh Botanic Garden from 1883 to 1886. It was ascertained:

1. That some trees begin to increase in girth in April, but only a very little, and that some continue to grow to a still more trifling extent in September; that the growth of evergreens in May is considerable, but that the main increase of deciduous trees is confined to June, July, and August.

2. The maximum month of growth in most of the deciduous trees examined was July, and in most evergreens June.

3. That the increase in deciduous and evergreen trees in April was about equal, but the latter then went rapidly ahead, so as to accomplish the greater part of their annual increase in the first half of the growing season, while that of deciduous trees took place in the last half. In both classes, however, there were exceptions, and notably the Deodar, which increased in energy up to August, and accomplished 65 per cent. of its increase in the latter half season.

4. The annual increment in evergreens is spread more equally over the months than that of deciduous trees. Several species of the latter grew more than 50 per cent. in a single month. Some of the results are shown in the table, which gives only those species in which the results are fully reliable. Experiments on many other species have been commenced with the view of ascertaining their characteristics, and whether a general law of distinction between deciduous and evergreen trees can be made out.

Monthly Percentage of Increase of Girth in different Species of Trees, in Edinburgh Botanic Garden or Craigiehall, based on Three Years' Measurements:

	Species.	Number of Trees Measured.	April.	May.	June.	July.	August and September
Deciduous.	Beech	9	4	7	25	37	27
	Hungary Oak	3	9	9	20	35	27
	Turkish Oak	2	6	14	10	35	35
	Spanish Chestnut	1	9	12	12	36	31
	Liriodendron	1	2	5	5	34	51
Evergreen.	Sequoia	4	3	24	39	22	12
	Araucaria	3	17	23	32	19	9
	African Cedar	1	5	20	24	25	26
	Cypress	1	8	23	31	31	7
	Deodar	4	5	11	19	28	37

THE

GARDENERS' MONTHLY

AND

HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

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FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

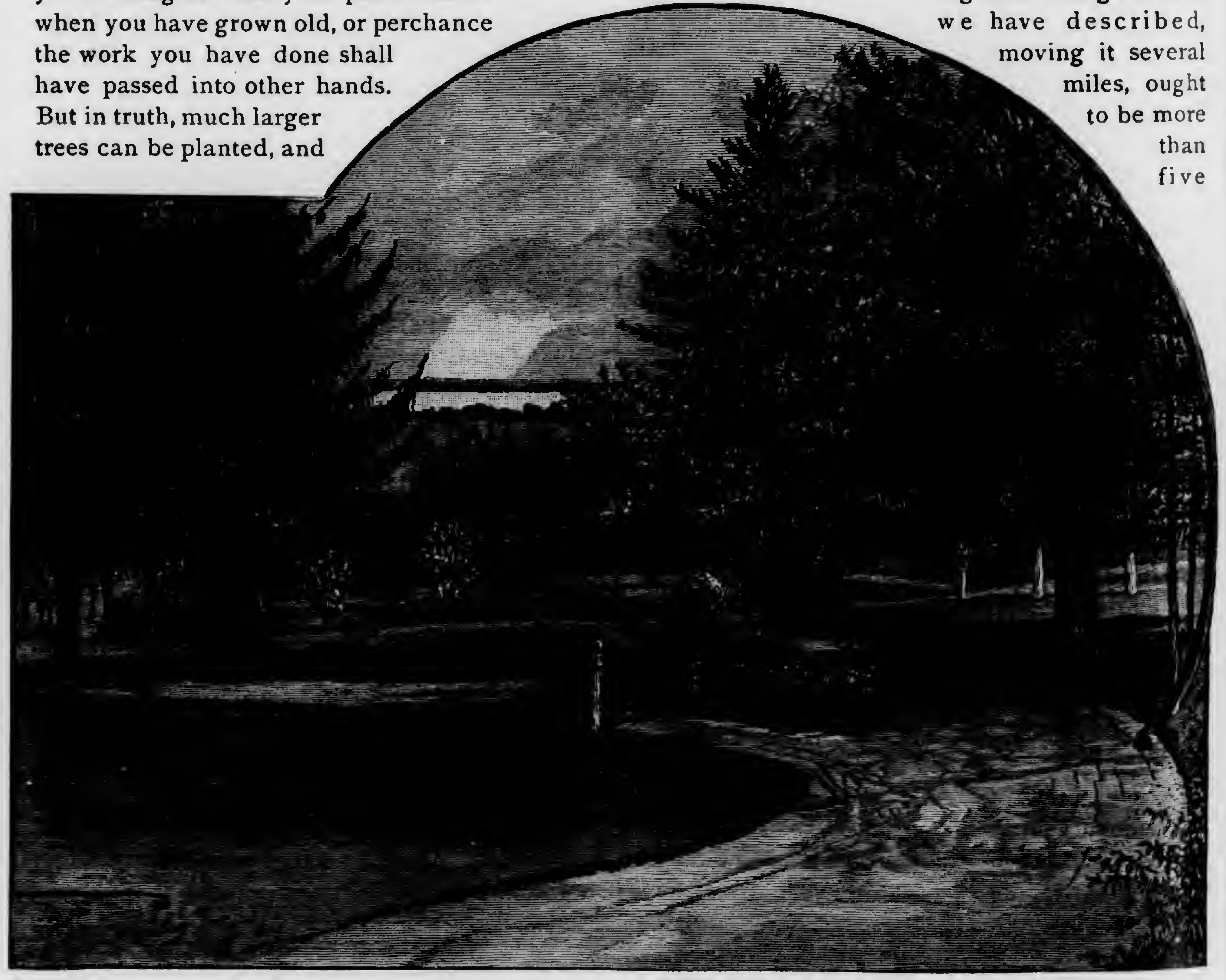
One does not need to own a twenty thousand dollar picture, painted by a master in the art, in order to enjoy it. In the picture gallery, or in the hall of the connoisseur, he is as free to criticise its points or revel in its beauties, as if its cost had been wholly his own. The educated observer has a share in picture pleasures in some degree equal to the educated possessor of the article admired.

This is just as true of landscape gardening. Hundreds who read these articles have but a small cottage, and a limited area of ground around it. The principles of landscape gardening that we would teach, will not give them a home and surroundings large enough, with wealth enough to put these principles into execution. But the teaching will enable them to share with others the work which others do. It will add to the pleasure with which they see the gardening work of others, and give zest to the visit to any well laid out park or public grounds.

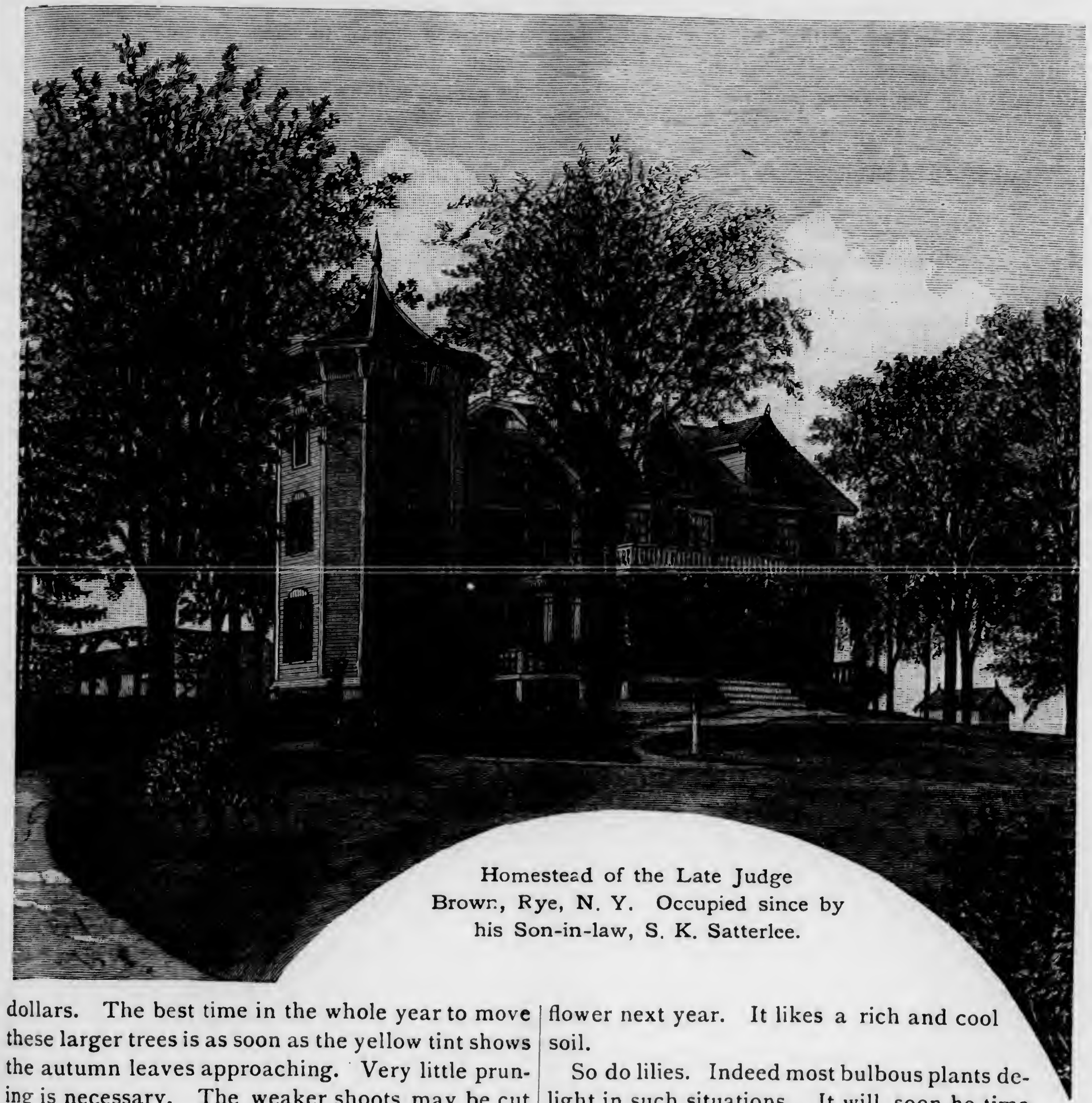
It is indeed, one of the principles of landscape gardening to learn to profit by what others have done, and this is one of the most difficult branches of the art. It is chiefly on this account that the employment of an expert in landscape gardening art becomes so desirable. There may be a church in the distance, a fine dwelling, a hill, a grand clump of trees, a rocky eminence, a sheet of water, numberless points of interest that we do not own, but never tire of beholding. An unskilful planter will set the trees so that when they grow nothing will be seen of them. Only one who knows the kinds of trees well, and what they will become as they grow up, can so arrange them that these distant scraps of beauty will grow in interest every day, instead of being finally shut out from view altogether. The writer of this was on a place not long since where one of the most glorious pictures at a certain season of the year, was a gorgeous sunset. The place had been in a great measure judiciously planted. The landscape gardener in charge was a person of some eminence. In the main he had produced a delightful picture. But this pretty feature had been overlooked, and a belt of trees was planted right in the way of this pretty scene. Go where we would over the grounds, there was no spot from whence one could see this lovely sunset picture, and the owner had to take our little party out into the public highway in order to give us a taste of this great pleasure. It could have been just as well arranged in the planting, that one should sit on the piazza, or by seats on the lawn and enjoy it, but this had been forgotten. It is the power to foresee, and so arrange the planting that the greatest number of distinct views as possible may be obtained, that gives the distinction of a great artist to the landscape gardener.

In illustration of how these views may be had by judicious planting, we give one taken on the grounds of the late Judge Brown, of Rye, West Chester county, New York, now occupied by his son-in-law, S. K. Satterlee. The little glimpse of the distant sky with the water in the river gives a charm to the gardening which greatly enhances the value of the grounds. This one view may be taken advantage of by the artist, who could so deftly plant, that it could be used over and over again, and yet seem on the same grounds to be a wholly new scene every time.

A great obstacle in the way of good landscape gardening is the time it takes for the trees to grow up, and show the designer's true plan. The artist finishes his picture at once, when he asks you to admire. The artist in landscape gardening asks you to imagine what your place will be when you have grown old, or perchance the work you have done shall have passed into other hands. But in truth, much larger trees can be planted, and at a much lower cost than was at one time thought possible, and we need not wait over a year or two in order to enjoy the tasteful picture the landscape artist has conceived. Trees 20 feet high and half a foot or more thick can be moved several miles for a few dollars, and with as much success as the small sprigs usually relied on. It is only necessary that the tree itself is healthy, and not have had its vital powers strained by seed bearing, poverty of the soil, or some direct injury. We should start to dig out far enough away from the trunk to get the feeding roots, and go deep enough so as to get under with forks, so that the tree can be easily drawn over by its own weight. Any two-wheeled cart backed up against the tree, the trunk lashed to the shafts to be used as a lever, and the job is soon done. The teaching whereby planters have been led to look after a "ball of earth," has been of more injury to landscape gardening than many people are well aware of. There is no reason why the average cost of moving such a large tree as we have described, moving it several miles, ought to be more than five dollars. The best time in the whole year to move these larger trees is as soon as the yellow tint shows the autumn leaves approaching. Very little pruning is necessary. The weaker shoots may be cut out leaving the stronger ones that have the full measure of life in them. If taken up as they should be, with a wide expanse of roots, they need no staking if properly planted. Care should be taken that there be no spaces, that the earth is rammed in everywhere. It is the unequal sinking of earth in rain storms, that makes trees topple over.



Drive Approach; S. K. Satterlee's Grounds, N. Y.



Homestead of the Late Judge Brown, Rye, N. Y. Occupied since by his Son-in-law, S. K. Satterlee.

It is remarkable how some plant disease will come, no one knows why, and almost destroy a whole tribe of plants, and then go away no one knows how. At one time the hollyhock fungus swept over the land like wild-fire. Now it is gone again and hollyhocks are as lovely as ever. Seed should be sowed now, if plants are desired to flower next year. It likes a rich and cool soil.

So do lilies. Indeed most bulbous plants delight in such situations. It will soon be time to replant lily and other bulbs. After planting, if any rich material can be had to mulch the bed for the winter, the bulbs will like it all the better.

The dahlia did not lose cast from disease. It got unpopular for no reason. But it is regaining the lost ground. For fine flowers, the branches should be thinned out a little, and the flower should never suffer for the want of flower.

Our own native asters and golden-rods are being planted in some gardens. Few people have an idea how great is the variety among these simple things. The improved hardy phloxes are also being more planted than they were a few years ago, though still not to the extent they have been. But they do so well in our climate that the power to foresee, and so arrange the planting that the greatest number of distinct views as possible may be obtained, that gives the distinction of a great artist to the landscape gardener.

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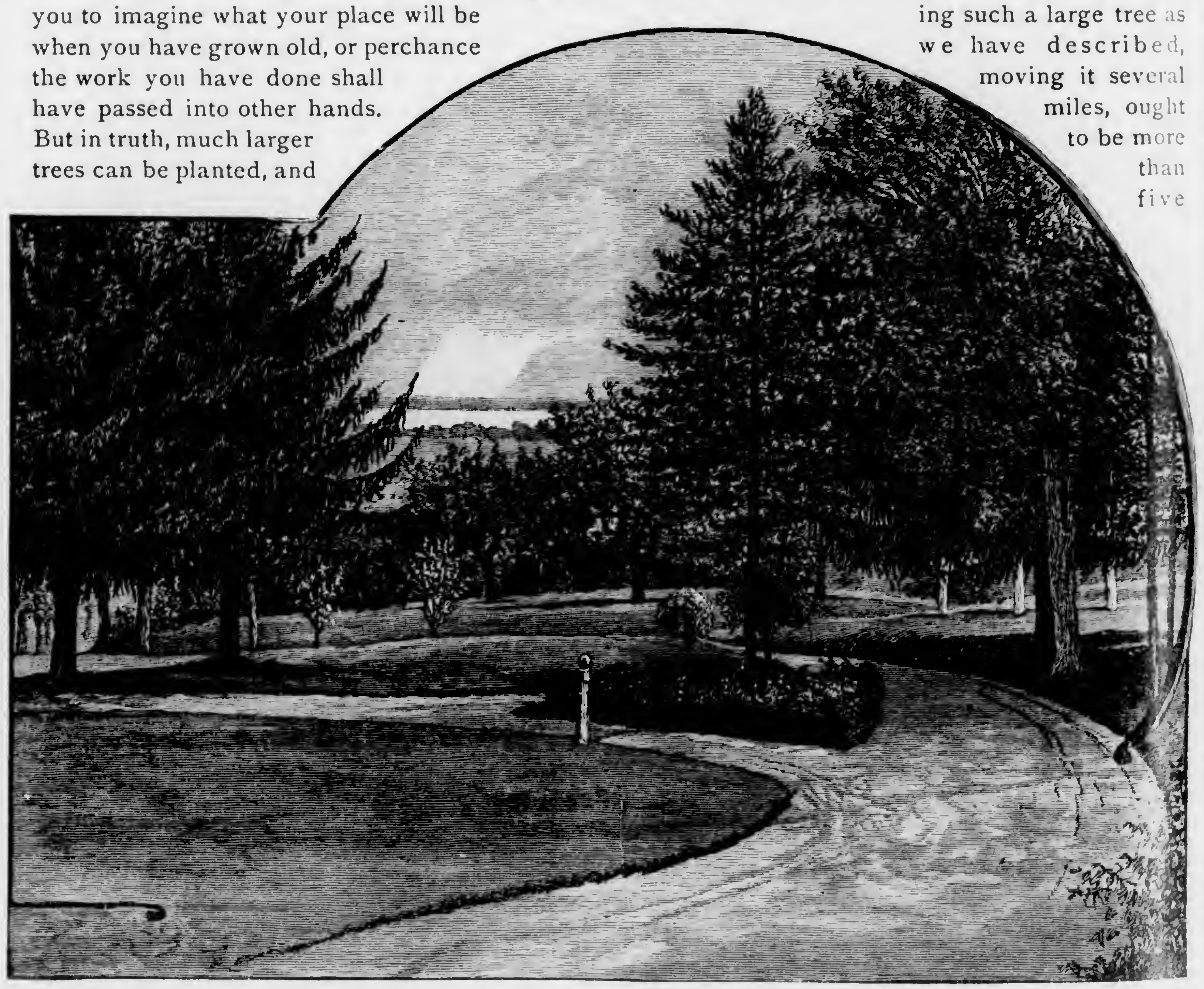

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INTENTIONAL SECOND EXPOSURE

every body should have them. The rage for geraniums and bedding plants has had much to do with the neglect of these nice things, but there is no reason for not having both.

COMMUNICATIONS.

CANNAS.

BY VALENTINE BURGEVIN.

In August last, during a visit to a floral establishment, my attention was called to a group of Cannas, lately imported from Europe by scientific florists, who produced this admirable collection by crossing them with the best varieties in existence. They are from eighteen inches to four feet in height, with variously colored green and brown shaded foliage, and of different and distinct forms of leaves, according to variety. The flowers are actually charming, larger than Gladiolas, producing up to twenty on a stalk, and leaving the C. Ehmani—deservedly esteemed by all lovers of flowers—somewhat in the dark. The flowers of the new Cannas are in various shades of red, from deep pink to dark red. One of them, the C. cardinalis, is similar in color to the Lobelia cardinalis, and is one of the most exquisite among these lovely sisters. There are also pure yellow ones, and yellow with scarlet pencil marks and designs on the petals, like an iris or orchid, and every variety is differently and most interestingly marked. I sent for varieties advertised, and they are now growing and blooming to my great delight in my flower garden.

Among catalogues sent to me from Europe I also found a collection of Cannas with some different names and very highly prized. I sent for them also, and they are now in full bloom, and are magnificent. In the same catalogues I found a plant named Spiræa venusta, which, if genuine, can hardly be praised enough. I saw this excellent specimen of a hardy character only once, about fifty years ago, and was fairly charmed to behold its precious flowers; its appearance made a deep impression on me which a half-century could not efface from my memory. I often made inquiries about it and talked about it with learned florists, but found only one who was acquainted with it and of the same opinion as myself. Now, after so long a search, I have this beautiful plant growing in my garden, and hope to see its wonderful blooms in my autumnal days yet. It was, when it came, a very feeble, dried-up root, just as if all life had abandoned it; but by taking the best of care of it and nursing it up like a baby, it began to show sprouts. Now it is a healthy plant, and has really the appearance of the article so long sought for, though without any signs of bloom yet. So I shall have, in all probability, to add another year to the half-century before I have the pleasure to behold its lovely flowers, providing that neither myself nor the Spiræa is counted to the departed from this beautiful world. However, if it gets into bloom in my days, and is the genuine Spiræa venusta, I will make it known for the benefit of all lovers of flowers.

I could not forbear from making the above remarks concerning an old and admired friend of my early years, and will now resume the description of the new Cannas, which are beyond all doubt one of the most attractive novelties and choicest ornaments for our modern flower gardens. Their tropical appearance and magnificent flowers are making a grand show. Their culture is very simple. The roots can be kept from year to year in a cellar free from frost, or under a bench in a greenhouse. When the roots are divided early in spring, planted in pots and transplanted up to the time for planting out-of-doors, they will commence to flower the latter part of June, and keep blooming until frost. I do not hesitate to say that they are very welcome additions to our modern pleasure grounds, and gladly give them a most distinct space. And if they keep on developing as they have done of late, I will safely prophesy them a glorious future.

Kingston, N. Y.

[We believe Spiræa venusta is a garden name for S. lobata. It is, as Mr. Burgevin notes, one of the most beautiful of border herbaceous plants. Its popular name of Queen of the Prairies shows that people generally have appreciated its beauty. —Ed. G. M.]

GARDEN NOTES—NEW ZINNIAS, JAPAN HOP.

BY L. W. GOODELL.

New Zinnias.—The improvement in double Zinnias within a few years has been quite marked, both in greater variety and more brilliant colors, and also in the habit of the plants. Two valuable strains are added this year, the Z. elagans robusta grandiflora plenissima of Lorenz (better call it Mammoth Zinnia for short) and the Zebra of Henderson. The former are, with me, now much larger than the old double sorts, and of good, bright colors, and give promise of coming up to the grower's description when the plants are matured. The Zebra is a decided acquisition. I have about two hundred plants, more than fifty per cent. of which show the distinctive variegation, the stripes on some being quite broad, and some have one-half of the flower of one color and the other half of another. The stripes are mostly of two or three shades of red on a yellow, cream-colored or white ground, and on some flowers the stripes are more or less broken into fine streaks or spots.

The Japan Hop—is a very fine, rapid-growing annual climbing plant, as hardy, healthy and vigorous in growth as the common Morning Glory. The leaves and vine resemble the common hop, but it differs in the leaves being quite regularly seven-lobed instead of three and five-lobed, as in the common species, and deeper cleft; and the leaves are rather smaller and not so thick. It is as easily raised from seeds as the Morning Glory, which may be sown in house or frames for early plants, or in the open ground in early spring. It seeds freely here, and the plants come in abundance from the self-sown seeds. I had a single plant last year, which was planted out quite late, so late that I did not think any seeds ripened, although it grew twelve or fifteen feet and flowered freely, but hundreds of the young plants came up early in spring where the old plant grew.

Pansy Park, Dwight, Mass.

AMATEUR ROSE CULTURE.

BY W. H. PARK.

For the past four or five years I have been much interested in the culture of roses. My comparative success in their cultivation, together with the great pleasure derived by myself and others in watching the growth of this the most beautiful of flowers, has led me to write a few lines, hoping that some of my readers may be induced to take up, practically, the study of this most interesting department of floriculture.

My experience has taught me that too much importance cannot be given to the proper location of the rose bed. If possible, place the bushes so that the afternoon sun may not reach them, for the rose—although dependent, as all flowers are, upon the sun—does not require so much as some other flowers, and, in fact, the hot afternoon sun during July and August brings forward the roses too rapidly and is apt to fade and spoil them. If the bushes can be somewhat sheltered from the cold, northwest winds of winter, so much the better. The most suitable soil is a strong, rich loam, made richer if necessary by frequent applications of manure in liquid form. I would recommend, in starting, decomposed turf, and this should be renewed from time to time, for even the earth under certain conditions grows old and worthless for rose growing. It may be safely laid down as a rule that it is impossible to make the soil too rich for the rose, and to this end I have used ground bones, soot, wood ashes and sheep manure, and find that my roses have thrived under this treatment. Indeed, I think it is because of the variety of fertilizers used that such good results have been attained. While it is necessary, at all times, to give to the rose, at the root and on the foliage, water in plenty, nothing, on the other hand, is more injurious than a wet, retentive subsoil. Should it be necessary to drain the bed somewhat, it can be very easily done by digging out the soil to the depth of say two and a half feet; fill the bottom to the depth of six inches with small stones, and then replace the earth. I would impress upon my readers the importance of cultivation. The soil should be dug and hoed, not merely to keep down the weeds, but to insure the health of the plant. A good time to stir the surface of the soil is shortly after having thoroughly drenched the bed, as by so doing one prevents the top of the ground from becoming hard. Watering and fertilizing are very beneficial just before and during the period of bloom. After blooming, water should be used unsparingly, as at this period new wood is forming, from which another year we must expect to gather our largest and finest flowers. In order that the rose and its foliage may come to maturity in a perfect form, it will be necessary that a constant watch be kept for the appearance of the vermin, which ever infest the rose-bush. Preparations of hellebore and whale oil soap are most excellent helpers to rid one of these pests. When mildew appears, powdered sulphur may be applied with beneficial results. While most rose growers have thought best to prune or cut back the growth of the bush each year, leaving it at a height of say from two to three feet, I have thought that to let them grow as nature intended is the better way. As a result of so doing I have quite a number of Gen. Jacqueminot and Paul Neron rose-bushes from eight to ten feet in height and blooming to the top. The following is a list of hybrid perpetual roses which I have been most successful in raising: Gen. Jacqueminot, crimson; Paul Neron, pink; La France, pink; Baroness Rothschild, pink; Anna Alexieff, pink;

Anna de Diesbach, pink; Mabel Morrison, white; Empress of India, black; Countess of Oxford, pink; Mount Carmel, pink.

In conclusion, let me say that while I have only touched upon the edge of the subject introduced, my object will have been accomplished if it shall have stimulated in the minds of only a few a desire to engage in the cultivation of the queen of flowers. It may not be improper for me to remark that I have received from Mr. James Nisbet, of our city, many valuable suggestions as to the best way in which to treat the rose-bushes at the different stages of their growth.

Pawtucket, R. I, July 23d, 1887.

EDITORIAL NOTES.

The Larch.—It is worth remembering that in most parts of our country the Larch, of all other trees, should be planted in the fall of the year, and as early in the fall as practicable—the best time perhaps, just before the leaves fall. It pushes into leaf so early that failures in spring often occur. It is one of the most ornamental of all lawn trees. Even in winter when it is leafless it attracts attention. When old enough to have cones, it is quite conspicuous in spring, by its brilliant red flowers.

The Oriental Plane Tree.—In our country the Plane tree was once a popular tree—but when the disease, still continued, deformed the Buttonwood or American Plane, the European fell into disgrace with it. Experience however shows that it is measurably free from the trouble that afflicts its American relative, and it is being again sought for by those who want to plant a tree of large spreading habit. It is not a tree for small places or very limited areas. A correspondent of the *Garden* thus speaks of it, as it appears in its classic home:

"The Oriental Plane seems naturally to luxuriate on the banks of streams, and I was especially struck with the magnificence of a grove of these trees in the Island of Crete, where, in a vale at the foot of the White Mountains in Sfakia, a few hours' ride from the town of Khania, watered by a copious stream, and probably getting its name, Platanus, as well as giving it to the whole vale, from the number of trees of this species growing there, the beauty of which is much enhanced by many of the largest and finest trees being held firmly in the grip of gigantic vines entwining their trunks for some feet above ground, as it were with a huge cable nearly the thickness of a man's body, and afterwards stretching out in long rope-like folds, through and over the branches to their very tops, and hanging down in long pendent festoons of bright leaves and fruit, and yet the trees seemed in good health, though they must have been held for many a long year in the grasp of these monsters. While on the subject of these trees, I may here remark, for the benefit of those who may be ignorant of the fact, that there still exists is the Island of Crete, or did so some few years ago, an evergreen variety of Plane tree, mentioned by Pliny and others, and authenticated by Admiral Spratt, whom I had the pleasure to accompany in one of his numerous visits to the island, but, though near the spot with him, he had not then re-discovered this rare and possibly very local production of nature."

Public Park at Newburg.—Arrangements are being made for a public park at Newburg, N. Y. The *American Garden* suggests that Downing Park would be an appropriate name for it.

Parks of Boston.—Boston has 3,356 acres of public park, of which about four square miles are in open spaces of about four acres each. It is an excellent example to other cities. Philadelphia made a start in 1883, and ordered by an ordinance of Councils that its Survey Department should locate these small breathing places over the whole city, so that one by one, they might be systematically purchased for public use. To enforce it nothing has been done by the city executive. Last spring the Councils of the city called the attention of the Mayor to the fact that the ordinance was a dead letter; but still the fact remains, that in this city boasting of its 140 square miles of territory, there are miles on miles of brick walls among which the only place to take even a sick child is on the crowded sidewalk of the public street. It is fashionable for other cities to deride the "cultchaw" of Boston—but that culture that gives the poor and the sick some chance of a little pleasure beyond what brick walls and stone steps at the sidewalk afford, is worthy of all honor everywhere.

NEW OR RARE PLANTS.

New Hardy Hibiscus.—An American florist advertises the following in the London papers. We have heard nothing of them in this country, and should like to know if any of our readers can explain. The description reads like the common Hibiscus Moscheutos of our Jersey swamps:

"These grand hardy Hibiscus, which were produced after years of careful cultivation and hybridization, we now offer for the first time. Though none have previously been sold, they are not altogether unknown, for hundreds have seen and admired them at Floral Park during the past two or three years, and considerable has been said about them through the papers. They are perfectly hardy in any place and each spring send up numerous branches, which, from well established roots, grow 5 to 8 feet high, forming a dense clump, as seen in the cut, which is truly a showy object. The enormous flowers are produced in great profusion from July to September, and are over a foot across, being the shape of large saucers. The colors range from pure white, through all the shades of blush and pink, to deep brilliant rose. Plants from seed bloom the first summer, and increase in size and beauty every year for several years."

A New Balsam—Impatiens Roylei.—The *Gardeners' Chronicle* says:

"It may interest apiarians to know something of a plant, easily obtained and easily cultivated, that will supply their bees with a large quantity of honey at a season when honey-yielding flowers are getting scarce. This plant is no other than the Giant Balsam (Impatiens Roylei, Walpers), better known under the previously occupied name of I. glandulifera, Royle—not "glanduligera," as commonly written. It is an old inhabitant of our gardens, having been introduced from North India by Dr. Royle about forty years ago; and in neglected gardens or undisturbed ground it will reproduce itself year after year. Like the majority of its congeners, it is an annual, and a robust one it is, often growing to a height of 8 or 10 feet, or even higher, and having stout fleshy, brittle, hollow stems. In the garden of the Horticultural Society at Chiswick, whither it was sent by Dr. Royle in 1839, it attained upwards of 12 feet in height by the end of August, although the seed was not sown before the end of May."

A friend of the Editor's near Philadelphia, had a few seeds in 1886, and sowed them in the open ground in May. They did not germinate till the present spring. At this writing, July 28th, the plants are about 3 feet high, with the rather showy purple flowers on the apex of the leading branches. When the laterals are also out, it will be conspicuous, and make a nice tall growing annual for flower borders. Though it has been in bloom for a month, the honey bee does not seem particularly attracted to it, but a smallish black bee visits it freely for its pollen. It should be observed, however, that the visits of the honey bee to flowers for their sweets, is a matter of education. When they come to learn what is in these blossoms they may frequent them. The plant is, however, pretty enough to be grown for its beauty if not for its sweets. Speaking further about its apiarian prospects, the *Chronicle* says:

"With regard to the value of Impatiens Roylei as a honey-yielding plant, we are indebted to a report by Dr. Münter, director of the Botanic Garden of Greifswald, in the *Garten Zeitung*. It appears that it was exhibited at an exhibition of a society for the promotion of bee culture, held at Potsdam, as a bee-feeding plant, and its qualities were so highly praised that a gentleman named Van Behr determined to try it on the Baltic coast at Greifswald."

Calycanthus occidentalis.—The Western Sweet Shrub does fairly well in the Atlantic States, and is useful for flowering in July, after the native Eastern species has gone out. But the odor is not of strawberry and cream, rather of an apple that has seen its best days.

Tufted Pansies.—This is the name given to a new race of Pansy, by the London *Garden*. It has been produced by crossing the Pansy with some species of Alpine Violet. The plant grows in tufts like some species of Violet. Judging by the colored plate, the new race will be welcomed by flower lovers.

SCRAPS AND QUERIES.

Well Planted Trees.—"B." Baltimore, Md., says: "I have a puzzle which I would be obliged if you can unravel for me. I bought a quantity of deciduous trees this spring, which were temporarily covered with earth on their arrival to keep the roots moist. My gardener is a first-class man, and the trees were set out with every care and skill. In spite of this excellent attention most of them have died. But, six of the trees my gardener thought too poor and would not plant. They were left covered up temporarily as I have described, as the nurseryman to whom we complained did not care to take them back—though he generously deducted them from the bill. Now, strange to say, all these six, lying on their side, and only carelessly covered, are growing nicely, while those which had such skilled attention are mostly dead. I know the trees were well planted. Can you tell why they should die and the others live?"

We never were good at untying puzzle knots, and would rather have some one else get the pleasure and satisfaction. We can only say in a general way, that there may be some difference of opinion as to what constitutes good planting. There is a great deal of mere theory — mere notion—about tree planting. Some of it harmless, but much injudicious. We have known some very ignorant men beat the men of intelligence in tree planting very easily. A man may be very successful in ninety-nine things—and yet never have caught the right knack in the hundredth.

Roses in the Open Ground.—"B.," Hammonton, N. J., writes: "Will the Gardeners' Monthly please inform me whether I can grow such roses as Bennett, Am. Beauty, Pierre Guillot, Marie Guillot, The Bride, Perle des Jardins, Sunset, Namenlose Schöne &c., in the open ground and winter them over for several years with certainty and a reasonable amount of protection. I have some of them on the south-east side of my greenhouse and considerably sheltered in all directions. I have prepared the ground well and would like to be able to depend on them for flowers all through the season; I do not want to cover with earth unless necessary. Can they be wintered by covering with evergreen boughs? It has occurred to me that I might protect with some such material and then stretch over the bed, in the form of a roof, oiled muslin. What do you think of this plan and what would be the cost per square yard, and how long would it last?"

[Roses in winter are not killed by cold—but by the drying out of moisture, which cold often causes. We have known roses in cold frames where the thermometer must have been down to zero, wholly uninjured, when they often seriously suffer by a frost at 20°—in the open ground. The oiled muslin is a capital idea because it partially arrests the evaporation that ends in death. It is also now pretty well known that bright light is often a great agent in the death dealing evaporation of our cold winters—so that the oiled muslin, aiding darkness against light, ought to have merit in preserving the roses.

We have however had no experience, and can only say the project is reasonable. Nor have we had any experience in the preparation or cost of the oiled muslin. On this we would be glad to hear from some of our practiced correspondents.—Ed.G. M.]

The Double Tiger Lily.—"Mary" writes: "Father says the Editor of the Gardeners' Monthly might like to know that this lily does not do as other double flowers do—come double by changing stamens into petals. The flower is as if made by setting three flowers into each other, as would set three cups or saucers—and then come the regular six stamens. But I do not care so much for its botany as for its beauty. It is much prettier than its single bachelor brother."

A very good note; and we join in the last expression for we love beauty also.

Fine Tiger Lily.—"G.," Ardmore, Pa., writes: "I went to a neighbor's garden lately, one who prides herself on having as nice plants as you might see any day, and there was a Tiger Lily with a stem seven feet high, and bearing nineteen flowers. I promised to write to you to know if any of your readers could beat it."

It is certainly very fine, but we have no record of the largest we ever saw. Do not think we have seen one the equal of this.

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

SOBRALIA MACRANTHA.

BY W. H. LESTER.

One is always certain to find something of interest in the Botanic Gardens here.

Looking in the Mexican house a week or so ago, I came across a splendid specimen of Sobralia macrantha, with nine flowers open at the time, and a glorious sight it was.

This genus of terrestrial Orchids is peculiar to the American continent, and the species are found all the way from Peru to Mexico. The one referred to is found principally in Guatemala, sometimes in very exposed situations, on bare rocks, where the roots attain a hold in the fissures for support. Several attempts have been made in this country and Europe to establish the plants in like manner, but, so far as I am aware, all have proved a total failure. Under cultivation they do best in large, well-drained pots, in peat, chopped sphagnum and charcoal. Several flowers are formed on the extremities of long, slender stems, more than one of which seldom opens at a time, lasting about three days, when another is ready to take its place, until all have bloomed out. They are very large—"four to five inches across"—and

showy, of a beautiful purple color, shaded with crimson. The above I consider the best of the genus. It is considered "miffy" by cultivators, but well repays any extra care and attention bestowed on it. *Washington, D. C.*

STEPHANOTIS FLORIBUNDA.

BY WILLIAM LYNE.

For many years, when I was doing a retail plant business, I grew a small number of Stephanotis floribunda, and occasionally succeeded in selling a plant, and that only to persons who had used the perfume so named. Upon inquiry, I never found a person who had met with any degree of success. They finally threw them away on account of the mealy bug taking possession. It is a well known fact that mealy bug is the bane of Stephanotis.

My recent experience and treatment, followed now for two years in succession, should give an uninterrupted supply of the finest and largest flowers, equal to single tuberoses, during the summer season; hence my object in writing this communication, so that all lovers of plants may have Stephanotis flowers if they wish.

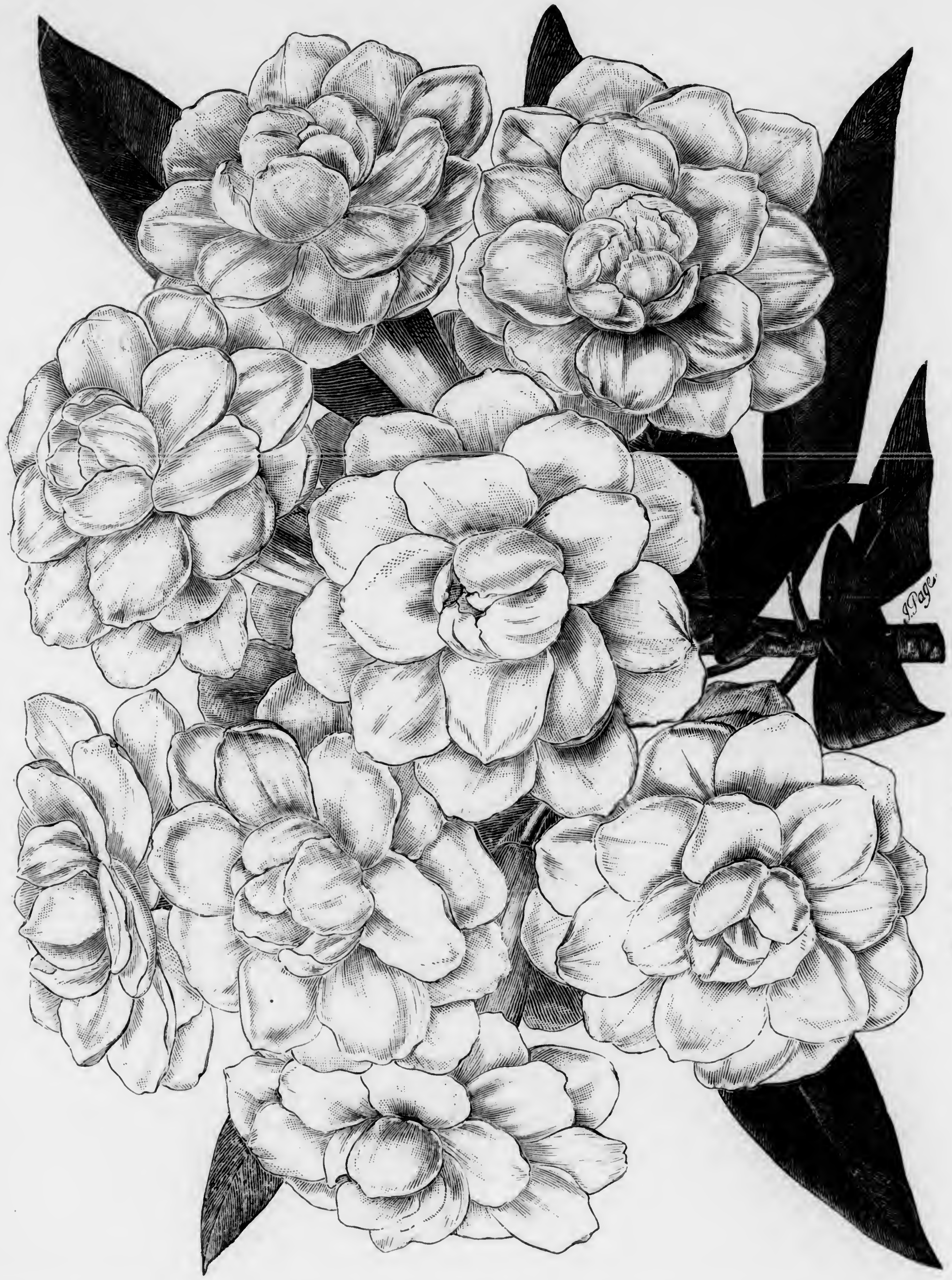
It is now three years since I took possession of Mr. J. H. Bass's establishment. In one of the houses I found a large Stephanotis running about near the glass—in fact, going wherever it chose to go, a few small flowers in clusters here and there, with mealy bugs by the legion. As soon as I could get at it, I had the plant taken down and laid under a tree on the lawn. We finally cleaned it and placed it in another house. The mealy bugs attacked it again in full force, and continued to do so all fall, winter and spring. I resolved to do something desperate with it—either kill or cure. I took a stout stick, five or six feet high, and nailed a cross-piece on the top, forcing it into the pot. I then hung the plant over the cross-piece, and tied it wherever necessary, top-dressed it with rich earth, and moved it into the full force of the sun. The consequence was the whole plant began to assume a new and healthy appearance. In a very short time new shoots started in every direction. Many of these I nipped after they had grown about a foot. But, what was more pleasing and satisfactory, in the axils of both the new and old wood clusters of flower buds made their appearance. As soon as a portion of them had expanded I moved the plant to the front of the house. It soon became a mass of flowers, and attracted a great deal of attention and inquiry from passers-by. After its season was over, I removed it back to where it had formerly stood in the spring, and early in the fall moved it into a large house, where the thermometer went frequently down to 45°. There it stood all winter. Last spring I top-dressed it and placed it in its old position in the sun. It made flower buds earlier than last year. Flowers are much larger, and now at this writing it stands in front of the house on the steps, as much admired as ever. Although its principal display of flowers from the old growths has passed, the young growths are blooming finely. If by writing this sketch of my treatment of a very worthy and highly fragrant flowering plant, based on my two years' experience with it out-of-doors, should be the means of attracting attention to it as a summer-blooming plant, my object will be accomplished. No mealy bugs need apply. There has been none on it since it first went out-of-doors.

[There was a good fairy once that told a good little boy he could have just what he wanted by wishing for it. The Editor must have been very good, and have had a fairy hovering over him, for only a few weeks ago he was wishing that some one who had found out how to grow Stephanotis in this country would write and tell all about it. No bride wants orange blossoms for her hair if Stephanotis can be had. The fragrance is about the same; and then the petals, while being as white and waxy, are not likely to fall apart as orange blossoms are.

The florists in the Old World who manage to grow the plant properly always make money by their cultivation, and the Covent Garden market report on cut flowers always quotes these flowers at enormous prices. The amateur lover of good things, as well as the trade florist who reads the Gardeners' Monthly in search of some new idea to make money out of, will both thank Mr. Lyne for his article.—Ed. G. M.]

EDITORIAL NOTES.

Steam Heating in the Old World.—We have occasionly noted how strange it seemed that English florists continued to almost wholly ignore steam heating of greenhouses in view of its rapid advance in the New World. Mr. Falconer has at length roused them to attention, and when he tells them that eight tons of coal with steam will do as much work as sixteen with hot water, they begin to think there must be something in it.



Rhododendron balsiminæflorum album. (See description, page 267.)

FLOWERS AT PUBLIC FESTIVALS.—Amidst all the changes in social and political life, and in religious and public institutions, and no matter how diverse these may be, no one thinks of doing without them. The soldiers of the American Republic, as well as of the dead Confederacy, decorate the graves of their fallen comrades with flowers, honoring both lost and the winning cause, with floral tributes. In the recent accounts of a festival in Mexico in honor of Juarez, we read that his monument was literally engulphed by flowers.

PUBLIC SALES OF FLORAL PRODUCE.—The London *Garden* still favors the plan of regular city public sales of flowers, and florists' products, instead of depending on commission sales as now conducted.

A DOUBLE GREENHOUSE RHODODENDRON (see cut, page 266).—In these days when a plant is popular not only for its beauty, but as it may serve the interests of the cut flower grower, the Asiatic Rhododendron we now present to our readers will be heartily welcomed. The plant has been introduced by the celebrated firm of Veitch, of Chelsea, London, who furnish the following account of it. They have also raised a yellow one, to which reference is made in the communication:

"These mark a new departure in the history of the javanico-jasminiflorum group, and are of especial interest, both in their horticultural and in their scientific aspect. They were, with three other varieties that have been publicly exhibited, obtained by our foreman, Mr. Heal, who fertilized a flower of one of the older seedlings that showed a tendency to become double, with its own pollen, and amongst the progeny raised from the single pod of seed produced from that flower, were the five remarkable varieties with double flowers we have mentioned, two of which we now have the pleasure of offering.

"The variety, album, as its name implies, has white flowers, which are produced in large compact trusses. The individual flowers are the largest of the four forms, and so distinct are they from every other Rhododendron, that they have been compared not only with the Balsam, a comparison that suggested the name for the group, but also with a Tuberose, a Gardenia, a Rose, and even with a Clematis.

"The variety, aureum, has bright yellow flowers. In both varieties the flowers are very persistent, lasting in perfection as long again as the single-flowered varieties. These Rhododendrons will thence prove to be among the most useful of decorative subjects for the warm conservatory; their flowers will also be most valuable for bouquets, button-holes, etc.

"Both forms received the award of a Certificate of Merit from the Royal Botanic Society, July 5th, and a First Class Certificate from the Royal Horticultural Society, July 11th, 1882."

LIFTING CHRYSANTHEMUMS.—The custom of growing the bulk of plants we require for winter flowering, in the open ground during summer, is getting to be very common. It saves a great deal of summer labor in watering and caring for the plants, and, if they are properly lifted, make better plants, and are more satisfactory than plants wholly pot grown. It is not, however, every one who can lift a plant properly. The leaves should not be allowed to wilt for an instant, if possible, or they will fall; and, so far as Chrysanthemums are concerned, one of the beauties of a well grown Chrysanthemum is to have its leaves preserved healthily till the flowers are passed. Very little time should elapse before the plant is in the pot from the open ground. The earth should be beaten very firmly, and little by little as it goes in the pot, a thorough watering should be given, and, if one has a dark place to set the plants for a day or two all the better. "A day or two," however, means that and nothing more. Several days would cause the leaves to turn yellow and fall.

GROWING HYACINTHS.—C. M. Hovey made a show of magnificent hyacinths, at the spring meeting of the Massachusetts Horticultural Society. His method of culture is simple. He pots his bulbs in September or October, and buries the pots in a cold frame, so that the roots may get a good start. A month before the bulbs are wanted for flowers, the pots are taken to a cool greenhouse.

SWEET PEAS.—Eastern florists tell of the increasing love for the Sweet pea, for cut flowers. Many more were grown than usual this year—but all went off at fair prices. They do not wilt as readily as some kinds—a good merit in a cut flower.

WHITE EVERLASTING PEA.—The perennial or Everlasting pea, has not proved as popular as the annual ones for cut flower work. There is not the same variety of color in it, nor are the colors so rich. A pure white variety has however been raised which is said to be very desirable for cutting.

PERLE DES JARDINS.—Mr. James Taplin of Maywood, N. J., reports that this beautiful yellow rose was a partial failure in that section of the country last winter.

SCRAPS AND QUERIES.

COLD WATER FOR FLOWERS.—"Mary E. F." inquires "whether it has been settled if watering plants with cold water is an injury to them?" We think it has been entirely settled. It does not hurt plants in the least, as a general thing, so far as any permanent injury to the plant is concerned; but if we want a plant to hurry up its flowering, warm water is an aid. Cold water somewhat retards rapid growth. That is all there is now in the question.

A Fine American Aloe.—Mr. Henry Higley, of Cedar Rapids, Iowa, sends us a photograph of what is probably the finest specimen in cultivation of the great American Aloe. It is 7 ft. 6 inches from box to extreme top. The box is 2½ ft., making the plant 10 feet high. It has a spread of a little over 12 feet. The exact age of the plant is not known, but is supposed to be about 30 years.

A Beautiful Cycas revoluta.—One of the most beautiful Sago Palms west of the Mississippi is said to be in possession of Mr. M. J. Nagel, a noted landscape gardener of Jefferson City, Missouri. It is only 18 inches from the tub to the first leaves; but the stem is 2 feet 6 inches round, has 52 old leaves 3 feet 6 inches long, and is now pushing out 46 new leaves, which at date of this note were 3 feet 8 inches long. What a profitable plant it would be to some florist in those large cities where these plants are used for decoration, or the leaves themselves used in floral ornamentation!

If there is a finer plant west of the Mississippi, we should be glad to have the facts and figures.

FRUIT AND VEGETABLE GARDENING.

EDITORIAL NOTES.

Notes on Wholesale Fruits and Vegetables in Philadelphia Markets.—As a general rule mere quotations a week or two after date are of little use; but there are often points to be learned from the doings of a huge market that afford hints for cultivators everywhere.

When the early peaches came in from Delaware and Maryland, the first week in August, it was a surprise to find none of the many newer kinds of late years among them. Early Crawford seems to be still the main dependence of the peach grower. A very good one—perhaps equal in value—of which we had not heard before, called Munroe, came in considerable quantity, and must have a good local reputation to be spreading so quietly. Prices were fair—about $1.50 per bushel for a good article; but the crop seems not to be a full one this year. North Carolina watermelons brought for the best articles $15 per hundred. Some first-class New Jersey melons brought $20 per hundred. This shows that a near grower to market can beat the distant one, besides having less freight charges to pay. This has of late been an argument in favor of peach orchards near large cities, though the cost of land may be higher.

The cantaloupe crop is said to be better than for some years; but the prices keep up, which shows a growing consumption. The best brought 75 cents a basket.

Early apples are usually considered profitable in the Philadelphia market, and large growers of Red Astrachans always find ready sale for their products at fair rates. $2.50 and $2.75 per barrel were the ruling prices.

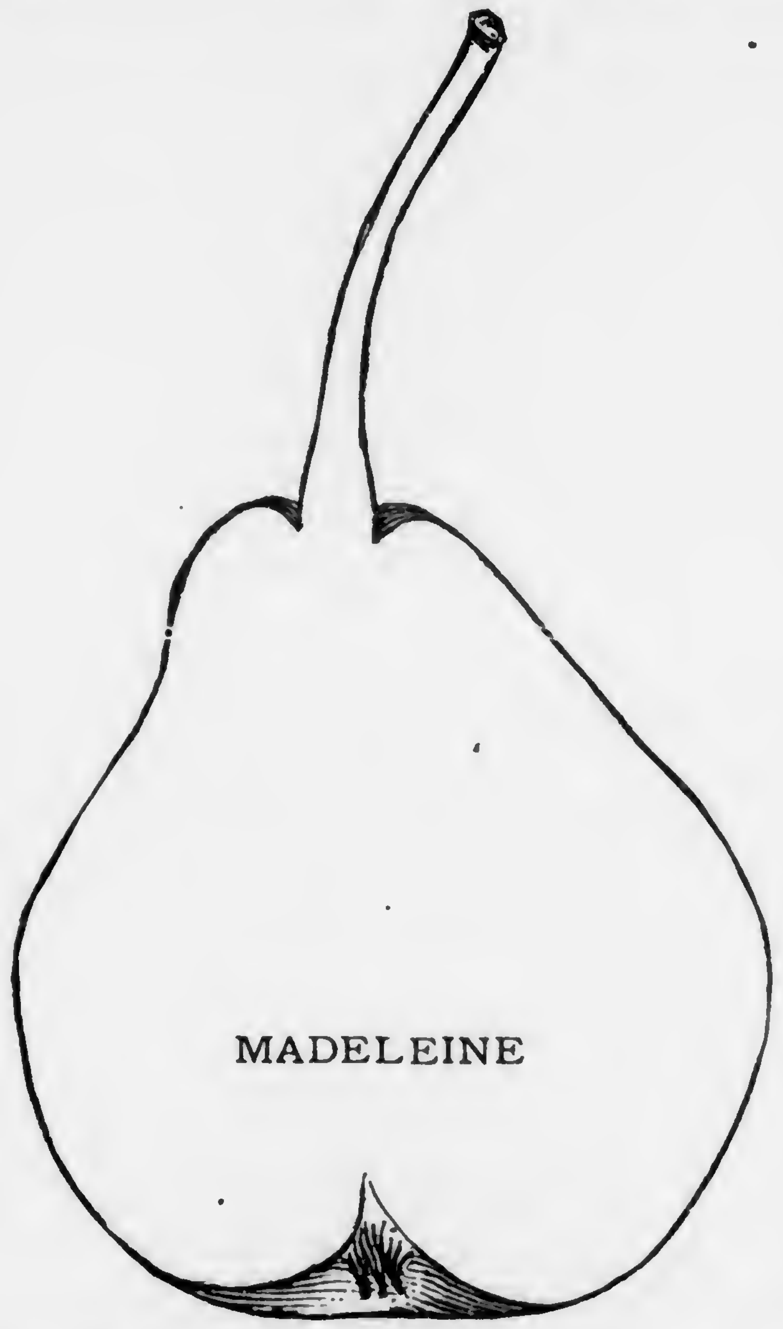
The first grapes of the season, the first week in August, came from Virginia and North Carolina. The Delaware were very good, and brought as high as 15 cents per pound. The market was about closing for blackberries, and 12 cents per quart thought to be a good price for them.

In nothing is the difference between good articles and poor articles shown to better advantage than in tomato sales. While the very best first-class article was eagerly sought for, and brought 40 cents a basket, the scrubs were dragging at 10 cents. Michigan (Kalamazoo) celery was poured in in immense quantity, and yet prices kept up pretty well at about 25 cents a bunch. Sweet corn was also in great abundance; but the best brought 50 cents a basket. The best white potatoes 35 cents, and the best sweet potatoes $1.25 a basket.

Good Old Fruits—Madeleine Pear.—While the rage for novelties keeps fresh and warm, it is not well to leave to cold neglect the good old stand-bys that have given us pleasure in the past, and show no disposition whatever to "run out" or in the least shirk the duty they have assumed of giving us full return for the attention paid them. True, some of these do not do well everywhere.

They are not wholly destitute of local tastes and prejudices, and yet there are few among pears that have this flaw in their character to any great degree. Most will do well anywhere.

The pear we now illustrate is a comparatively old one, and though so highly esteemed in its own country, France, it is comparatively unknown in English gardens. The pear an English orchardist would recommend for the best early would be Doyenne d'Ete; yet so little do American pear growers think of it, that its name does not occur at all in the list of the American Pomological Society, while the one we now illustrate is recommended as worthy of planting in eleven States. In France the great number of synonyms at once attests its popularity. It is known as Citron des Carmes (being first cultivated by the monks known as Carmelites), Magdelen, and Saint Madeleine, and in Germany it has had the names of Grune Sommer Magdalena and Grune Magdalena. On the Channel islands, off the coast of France, it is known as Early Chaumontelle. A variety of names is always a sign that a variety is very widely grown. It ripens about the St. Madeleine's day in France, and has derived its name therefrom.


MADELEINE

Near Philadelphia it ripens early in July, and is gone just as Osband's Summer comes in. We are not quite sure that it is so very much better than Doyenne d'Ete that this kind deserves to be so entirely ignored by the American Pomological Society. Still, we think it deserves the position it occupies in the Society's catalogue.

Downing gives no cut to illustrate the variety, so we supply this, and quote from this author the description: "The Madeleine is one of the most refreshing and excellent of the early pears. The tree is fruitful and vigorous, with long, erect olive-colored branches. Fruit of medium size, obovate pyriform. Stalk long and slender, often nearly two inches, set on the side of a slight swelling. Pale, yellowish green (very rarely with a brownish blush and russet specks around the stalk) calyx, small, in a very shallow-furrowed basin. Flesh white, juicy, melting, with a sweet and delicate flavor, slightly perfumed, good to very good. Middle to last of July."

The catalogue of the American Pomological Society says that it is reported subject to blight in some localities. We suppose fire blight is intended, for, as regards leaf blight it is, we believe, one of the most free from that trouble. If any of our readers have had extra success or unusual difficulty with it, we should be glad to know.

Fruit in Massachusetts.—A note from Worcester, Mass., August 2nd, says that peaches never looked better at the same date. There will not be many apples, it being an off year—but there are more than usual, considering this circumstance.

American Fruits and Vegetables.—The *Garden* having stated that the American cranberry, "when cooked, is said to be very palatable," and DeCondolle, in his "Origin of Cultivated Plants," that "the United States, in spite of their vast territory, which will soon support hundreds of millions of inhabitants, only yields, as nutritious plants worth cultivating, the Jerusalem Artichoke and the Gourds," Prof. L. H. Bailey Jr., Michigan Agricultural College, enters the arena with the following cudgel in his hand:

"The cranberry is a very popular fruit in America. Especially will you appreciate this when you take into consideration the fact that thousands of acres of wild cranberry marsh are annually picked over and the products sold or used for home consumption. Of course, we never eat the cranberry raw. Its principal use is for sauces and pies. Its aromatic, rich acid is refreshing and wholesome. A considerable portion of the crop is now exported to England.

It is surprising how independent we Americans are in this matter of fruit. Nature has dealt liberally with us. It is only thirty years ago that the cranberry was known only in a wild state; now it is much improved, and several good varieties have been produced and are now in cultivation. Fifty years ago our wild strawberry was scarcely known to cultivation; now every valuable variety of our gardens is a product of our wild species, Fragaria virginiana and its var. Illinoensis. It is only the amateur who now grows Jucunda and Triomphe de Gand, of European origin. Along our northern borders the European Fragaria vesca grows wild, but it attracts no attention from the horticulturist. All our grapes of out-door culture —and that is the almost universal culture in this country—are products of our wild species. A few varieties, as the Rogers hybrids, are crosses between our own species and the European. Only three of our wild varieties have yet been ameliorated to any extent; while nine or ten more species are waiting to be taken in hand by the cultivator. Two species of raspberry, the black and the red (Rubus occidentalis and R. strigosus), wild in all our woods, have given us the numerous varieties of our gardens and markets. The European sorts are grown only by amateurs. Our blackberries and dewberries, fruits of bright promise, are offspring of the Rubus villosus of all our copses. Our best gooseberries are also of American origin. Of course, these gooseberries are by no means equal to the great luscious fruits of your English gardens, but they are the only ones which can be profitably grown here. At the present time our native plums are receiving much attention, and already a score of varieties are in the market. Twenty distinct wild species of Prunus are found in the United States."

Orange Scale Insects.—Prof. C. V. Riley has just returned from California, where he has been studying the orange scale insects. He found the injury reported to be by no means underrated, and some orange orchards were being abandoned on account of the scale. It would be easy to get rid of the insect if it kept to the branches, but it covers the young fruit, rendering it small and inferior, even if the insects are scrubbed off before marketing the fruit. He says the phylloxera for the grape, and the phylloxera for the apple, have invaded California at last, but the curculio for the plum and apricot have not yet found California out. As California has become in a measure the rival of Florida in citrus productions, the Professor has been asked which country is best on the whole for these plants. He says he finds one has an advantage, and something else in the other, that he thinks advantages balanced.

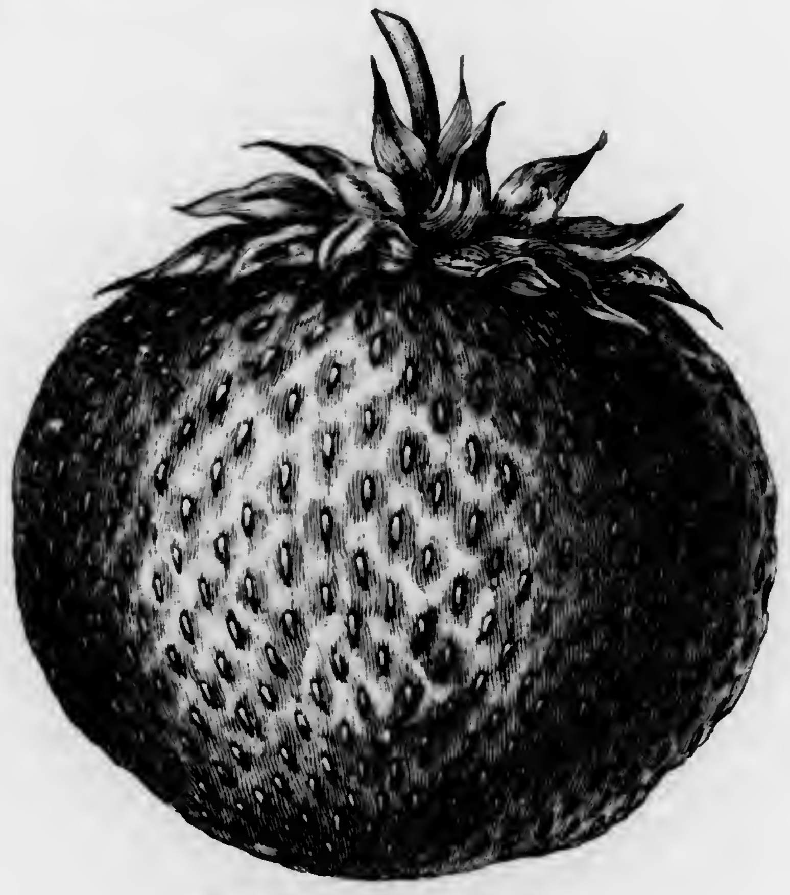
To Make a Caterpillar Torch.—To burn out tent caterpillars a torch has to be used which Prof. Riley thus describes: Take a piece of soft brick known as salmon brick, and trim it to an egg shape; then take two flexible wires, cross them over the brick, wrap them around it, and twist the ends together. Then attach it by the wires to a long stick, and soak the brick in coal oil; light it with a match and you are armed for the work. Asbestos may be used to advantage; and a little thorough work early enough in the season, will obviate the necessity of more expensive remedies at a later time. The soaking in the oil may be repeated as often as required to maintain the flame."

The Fig in California.—This promises to be the most permanently profitable of all California fruits. The orange has hitherto been given the highest position.

The Sharpless Strawberry.—There have been some complaints this year that the Sharpless did not get red right up to its point, as it usually does—but the plants continue remarkably healthy. So far as we have heard no spot has yet appeared on its leaves and it will probably not be necessary to introduce "the most wonderful berry in the world" to replace it for some time yet.

Approved Strawberries for Ohio.—Mr. M. Crawford a noted fruit grower of Cuyahoga Falls, reports for the past season that Jessie, Itasca, Summitt, Ohio (pistillate), Bubach, Jewell, Ontario (too near Sharpless), Belmont, Covel (better than Crescent), Lida and Henderson as varieties among the newer ones, have good points recommending them to cultivators.

The Gold Strawberry.—Of the same parentage as Jewell, and about the same size. Its flavor is said to be very superior, and the size equal to Jewell.



The Gold Strawberry.

The annexed illustration shows how the form differs from its sister berry, the Jewell. The large number of small seeds together with the globular form, will be good characters for identification.

The Belmont Strawberry.—The Massachusetts Horticultural Society thinks very highly of the behavior of this strawberry this season. It is an excellent amateur berry, as the fruit does not ripen all in a few days, and then all is over.

The Golden Queen Raspberry.—A few years ago we had an excellent accession to the golden class of raspberries in the Caroline. Now we have another in the Golden Queen, sent out by Ezra Stokes, of Camden, N. J., who found it growing in a garden of Cuthbert's. We have not seen the berry, but it is represented to be equal to the famous Brinkle's Orange in quality.

Spinage.—Many people complain that they do not do well with spinage. It should be remembered that it is a cool-country plant, and should not be sown until about two months before the frost period sets in. The ground should be very rich. It can scarcely be too rich, if good succulent leaves are desired.

Earthing up Celery.—We were surprised to read recently the statement from one whom we are accustomed to look up to as a leader in vegetable growing, that it was a waste of time to be continually earthing up celery. Better wait till fall and then make one job of the whole. The fact is that blanching is a process of growth. The leaves must grow white, and if we leave a celery stalk complete its growth before we earth it up, it will blanch out very little if at all thereafter.

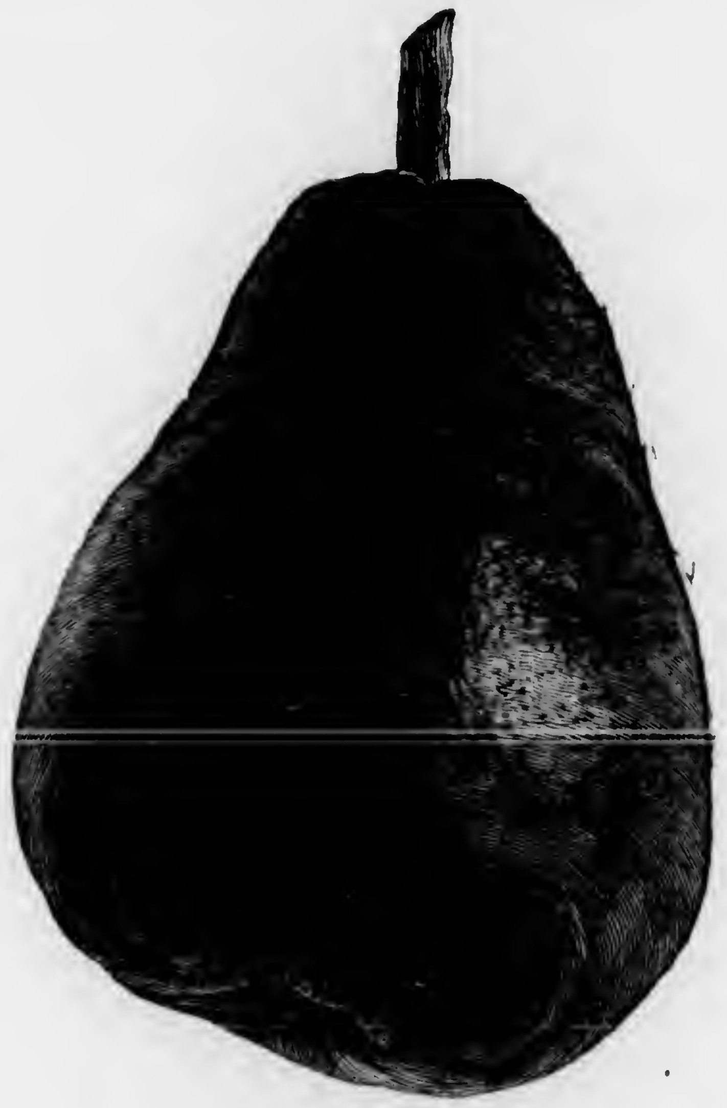
One of the greatest of arts in celery growing is to know how to earth it up for blanching. If we do it too rapidly, or cover too deeply at each earthing, it will check growth. If we leave it too late, or do too little, there is too much green waste. Little and often is the golden rule in earthing celery.

Forcing Asparagus.—The attempts to bring asparagus early into northern markets has not been a great success—and as it is a very easy plant to force, we believe there is money in it to an enterprising man. People thought nothing could be done with tomatoes and strawberries, but Willson at Vineland has taught people otherwise.

NEW OR RARE FRUITS.

The Wilder Pear.—Mr. Charles A. Green, Rochester, says: "I shall be glad of your opinion on the Wilder pear." Presuming that it ripened at Rochester, we think so well of it for an early pear, that we have sent it to the engraver. It is a pleasantly juicy sub-acid fruit, just the thing for a thirsty July day (July 30th).

Its positive value will of course depend on how it compares with other early ones maturing at the same time with it in the same vicinity. Of that we cannot tell. We can only say that it is larger and jucier than any of the early ones as growing here, except possibly Giffard, but with which we are unable at this moment to make an actual comparison. It is not quite as long as we generally get Giffard, but is probably heavier. The one we figure weighed 2¾ ounces. It measured 7 inches in its longitudiual circumference, and 6 inches round horizontally. It is russetty brown on the sunny side and yellowish green on the other.



The Wilder Pear.

Pear Beurre Hardy.—This fine Russet pear, 5 inches by 4 inches, is regarded by Mr. Pynaert as one of the best Belgian pears, maturing in September and October. We do not know of any one who has given it a fair trial in our country. It was introduced in France in 1830.

General Lee Peach.—This is considered a good peach in Florida. Specimens nine inches round, were received by the *Florida Dispatch* on the 1st of July.

Bubach Strawberry.—This variety has proved the past season that it is a very good addition to our list of strawberries. It is not early, but rather below medium in its season of ripening.

SCRAPS AND QUERIES.

POOR SEEDS.—"F.," Cincinnati, O., writes: "I am glad that you give a hit now and then at poor seeds. It is quite common to hear that old seeds are as good as new, and this is the excuse given for selling them. I had a good chance to test them this year. I wanted to sow quite a quantity of Osage orange. The season was a little late, and on inquiry at a well-known seed store, whose advertisement I saw in the MONTHLY, I received for answer that the quantity asked for could not be supplied of last year's crop, but that a little was left on hand of the season before, and of the season before that; but the firm believed that seed several years old was as good to grow as seed wholly new. I was pleased with the honesty that did not mix old seeds with new, and ordered. I sowed them all separately, and now for the results: The seed of last year grew nicely; nothing could be more satisfactory. The seed two years old did not get above ground till two weeks after the other, and there are but one-half the quantity of plants from the same quantity of seed. The seed three years old did not grow at all! My experience is that old seed is not as good as new.

[This is a very interesting note, as we did not know before that when older seed did grow it took longer to sprout. We take this as an evidence of low vital power, though the seed is still alive.—Ed. G. M.]

QUALITY IN FRUIT.—A correspondent asks why, when speaking of quality in fruit, writers have come to confine the term to nice flavor. We do not know that they do, though it is often used to express a very eatable fruit.

KILLING COUCH GRASS.—"C. J. T.," Flora Dale, Pa., writes: "I am very much obliged for the information concerning the Couch grass I sent you. Will follow your directions where we can do so. There is a large amount of it in our grass fields that cannot be attended to until those fields come round again. We have one field in corn three years in succession, and have been cultivating and hoeing it thoroughly, but it still grows. Every broken joint seems to take root and grow off luxuriantly. I had about come to the conclusion that it delighted in cultivation; but maybe we did not do it right."

[Undoubtedly you did not do it right. We print this letter in order to emphasize the point made, that the plants must be hoed out and cultivated while the leaves are immature—when the green is barely visible. Indeed, it must not be permitted to make perfect leaves. It is the easiest thing to destroy any plant, weed or otherwise, if "done right."—Ed. G. M.]

BEES EATING RASPBERRIES.—"Apis" writes: "I do not know whether bees eat grapes or not; but this year I am nearly wild about my raspberries. I have a neighbor who keeps a large lot, with hardly anything for them to live on. The poor creatures have to forage for miles. Now, it is singular that I have had raspberries in my garden for years, and my neighbor has had bees for years, but I never had them eat raspberries before as I know. I think it is quite likely that the statements I see in bee journals that somebody put grapes and other fruits near bee-hives, and the bees would not touch them. They are evidently learners. Having at last found their way to eat a raspberry, they will, no doubt, continue to profit by their knowledge."

ROTTING PLUMS.—A Lenox, Mass., correspondent says: "Will the GARDENERS' MONTHLY kindly inform 'No. 4' what is the matter with his plums, a great many of which are dropping off his trees?"

These have had an egg deposited in them by the curculio when they were much younger, and are now rotting, which is the usual consequence of the curculio's attack. The half-moon-shaped marks can be seen on the plums, where the ovipositor of the insect entered. The common phrase is, "they have been stung by the curculio." The remedy is to place a sheet under the trees about the time the fruit is as large as peas, and give the branches a sudden jar. The jar must be very sharp and sudden. The weevils will then drop to the sheet, and may be collected together and burned. Best do this every day for a week, and every other day for two weeks after. There is no other way to get plums after the curculio once gets into a plum orchard.

BARREN JAPAN PERSIMMON.—A Clinton, N. Y., correspondent, says he has a persimmon that bears no fruit. The Editor saw one in spring of which a similar complaint had been made. There were no anthers on the flowers, so the fruit, like a pistillate strawberry, is unfertilized, and comes to nothing. There is always a tendency to diœcism in all persimmons.

THE SAND PEAR AND HYBRIDS ON QUINCE.—"G. F. H.," Flat Rock, O., writes: "I saw a few days ago, an article from 'Lawrence of the *Ohio Farmer*,' Cleveland, O., in which he claims that Kieffer's Hybrid, LeConte, &c., pears, and in fact all sand pears, could be grown as dwarfs and successfully on the quince stock. I am under the impression, that you some time ago, claimed the contrary. Am I correct?"

[Mr. William Parry, of New Jersey, noted several years ago that the Kieffer pear did not do well. The Editor of this magazine grafted a few on quince for experiment, and these few confirmed Mr. Parry's observations. We have had no further word from anyone on the subject—but have no doubt that though there may be some exceptions, it is safe to say in a general way that these varieties do not do well on quince.—Ed. G. M.]

FORESTRY.

COMMUNICATIONS.

PROFITS OF FOREST PLANTING.

BY S.

In the April uumber of the MONTHLY, I gave some figures of locust timber on the farm of Isaac G. Smock, near Holmdel, in Monmouth county, New Jersey, and I promised to give some additional facts of the growth of locust trees on the same farm.

It is proper to state here that the first planting of locust on this property was made about sixty years ago by the father of the present owner. Small trees (mostly sprouts, growing up near old trees) were set at wide intervals on the banks and sides of ravines where the surface was too uneven and steep for profitable tillage. The few scattering trees thus early planted, were cut for fencing timber at intervals, as needed, from 1869 to 1878. With them there had grown up many trees of later planting, and also many of natural growth, sprouts from the older trees. The cuttings in 1869, and on to 1878, removed nearly all, and left the ground in condition for a second growth. The sprouts came up so as to occupy all of the broken land, and cover it with a luxuriant crop of locust. And now about all of the untillable land on the farm proper, is thus covered. Of course in the struggle for existence a large number of trees have died. But in the area cut over in 1869 nearly all of the trees now standing will attain size large enough to make posts. A recent count of the thrifty trees on a half acre, representative of the whole, showed that there were 246 trees, or nearly 500 to an acre. Their average height is 40 feet. A careful estimate of the quantity of fence-posts which they would yield, gave four garden posts per tree, equivalent to 2,000 on an acre, and valued at $400, and representing the product of the land for a period of nineteen years. Of course it would be better to defer cutting for about twenty years, when the trees would have reached a more mature growth, and when their size will fit them for more valuable uses, and when the product per acre will bring a larger value.

When it is understood that these locust plantations occupy ground which is practically worthless as farm land, and that the labor of early planting was comparatively nothing, having been done at spare intervals between the farm work, the results are suggestive of the value of tree-planting for profit. That the planting has been profitable to the present owner is evident from what figures I have given here and heretofore.

Albany, New York.

THE TAP ROOTS OF TREES.

BY ROBERT DOUGLAS.

Many questions were brought up at the American Nurserymen's Convention, in Chicago, last week, which were passed over for lack of time to discuss them.

A member claimed that the Black Walnut, being a tap-rooted tree, the only way to grow it to perfection is to plant the nut where the tree is to remain. A great many amateurs in tree growing, judging from isolated cases, are firmly fixed in the belief, that if the tap-root of a tap-rooted tree is once cut off or injured it will never make a full grown perfect tree. It is true that the Black Walnut is a hard tree to transplant after standing longer than a year or two where the nut was planted. A person wanting only a few trees would do best by sprouting the nuts in moss, or other moist material, and after the tap-root has grown an inch or two, cut off the end, and plant them carefully. I have found them to grow very satisfactorily in this way, they will not make so much growth the first season, but they will have a well balanced root and are easily transplanted.

This is two tedious when they are to be planted in large quantity; when planted on a large scale they should be carefully cultivated the first season, bringing them up to 18 or 24 inches, removed carefully, the roots well tightened when planting, and they will then be sure to grow.

This idea about the tree never coming to perfection is undoubtedly a mistake. In discussing this tap-root question, which comes up quite as often as the seventeen-year locust, we need not confine ourselves to the Black Walnut but take tap-rooted trees in general. The Oaks and most of the nut bearing trees will be found in this class; we will take the Oak as the type of the class. To understand them thoroughly we should take them as nature has managed them for ages before man. There are compensations in nature; she gives some trees an advantage in one direction, and some in another. Now let us see how Oaks and other tap-rooted trees would have fared, had nature neglected to supply them with their tap-root.

The Elm, the Ash, and most of our trees produce from 100 to 1000 seeds, to every one produced by our Oaks and nut bearing trees, and they are in many cases provided by nature with wings and other appendages for carrying them in all directions, where they may find an opportunity to germinate. The coniferous seeds have wings by which they can float away, as without them they would fall under the parent tree and "damp off" under its shade. The seeds of the Poplars are carried on wings of down, after they ripen in the early summer, so as to plant them in moist soils along the banks and bars of rivers, just after the waters have receded, leaving the ground with the right degree of moisture to favor the germination of such delicate seeds. The Elm seeds ripen at the same time, and it has almost an equal opportunity to distribute its seeds. The Elm is a wonderful seed bearer, a single tree sometimes producing nearly or quite a million of seeds, while 10,000 or 20,000 will rarely, if ever, be found on a tap-rooted tree. Hence we see that without the tap-root we would have neither Oaks nor Walnuts. The comparatively small number of these seeds have no provision for being carried to a distance, but drop under the parent tree, many of them are devoured by animals, but the few that remain force their tap-root into the ground, while the seeds of Elms and other trees are being dried up. This tap-root will penetrate between the roots of other trees and plants, and when once anchored, there it will bide its time, the sun may not be able to penetrate, so as to give scarcely a ray of light, yet this plant remains patiently waiting, forcing its tap-root deeper and deeper, until it is many times longer than all its growth above ground. It will struggle along, even when year after year the ground is so fully occupied that it cannot throw out side roots, until it gets an opportunity either from the decay of surrounding trees, when it will batten on the decayed roots and make a remarkable growth, or if a fire comes and sweeps the forest, the Oak will force up a shoot or shoots from the collar.

It is this pertinacity of the Oak which deceives the casual observer, and sets him to writing articles about Oak forests springing up after a Pine forest has been cleared away, "where Oaks were never known to grow before. I never saw a Pine forest in a soil and climate where Oaks could be made to grow that had not Oaks already growing there. Now, after the Oak has got firmly established, so that it can throw out side roots, it immediately commences to get rid of its dependence on the tap-root, and the sooner the better for the tree.

The tap-root is of no more use after the side roots are established than the tail is to the tadpole after it has got on its legs.

An Editor of one of our papers recently copied from a Scotch paper an article relating to a forester who had planted a number of young Oak trees with the tap-roots cut off, and at the same time planted a number of acorns of the same species of Oak. After several years' growth he had them taken up and placed on exhibition. The transplanted trees were both larger and better formed than the seedlings. Now, this was a very interesting and convincing experiment; yet there is not one nurseryman in a hundred who did not know that this must necessarily be the case. Yet this Editor was seized with a severe fit of Anglomania, and said that when forestry has been practiced in this country one hundred years we will then begin to know what they do now know in Europe. We certainly have a better opportunity of studying the effect of the tap-root on Oaks and Walnut trees than the foresters in Europe, as there is hardly a farm in the timbered sections of this country where the farmer has not had stumps dug out or pulled up and laid by the roadside. We also see them on the sides of new railroad lines and where improvements are going on. If any one will examine and study these stumps, as undoubtedly every one would who is interested in tree growth, he would not only see that these trees had long been independent of their tap-roots, but that the trees which had depended on them the longest were the poorest and most misshapen.

Show us a tree with a straight stem and a well-balanced head, and we will show you a tree that is not depending on the tap-root, but is gathering nutriment in every direction.

Waukegan, Wisconsin.

[Plenty of Walnut and other trees, transplanted and denuded of tap-root when young, are majestic trees about here. In Germany tap-roots to Walnut trees are regarded as evils, and when a nut is sown a milk pan is often placed in the ground under the nut, so that when the tap-root goes down it strikes the pan, and has to turn up at the sides, and then become a surface instead of a tap-root.—Ed. G. M.]

EDITORIAL NOTES.

American Forestry.—We have frequently pointed out that common opinion that looks to centuries to replace our forests is founded on a misapprehension of American character. When the time comes that a good profit can be demonstrated to follow tree planting, forests will spring like mushrooms from the ground, and millions on millions of feet of lumber will be fit for use in less than fifty years.

Our ways are not the slow ways of Europe. On this Mr. Douglas made a good point at the recent nurserymen's convention. He showed that the men whom he had used in planting were of all classes. Even the fighting men known as "Oklahoma boomers" were looked to lay aside their rifles, and take hold for the occasion of Douglas' tree ploughs. He says:

"Now, the 147,000 acres in Kansas have been planted by such men as these. They represent thousands of stalwart, practical, common-sense men, close observers. They are the owners of the trees they have planted. There is nothing like this to be found in Europe. A few land-owners, a few educated foresters, the rest mere machines for doing the work, that is forestry in Europe.

"It will not require one hundred years, nor half one hundred years, to place America far ahead of all the nations in Europe combined as growers of artificial forests. Less than fifty years ago, you could not make one in ten of our farmers believe that either tame grasses or trees could be grown on our Illinois prairies. Even now the European foresters are falling far behind us in many respects, or rather we are going ahead, and they are standing still. There is very little to show that they have gained within the past fifty years. They trench and spade their ground to raise their seedlings, and dig their trees with spades. We in this country prepare our land with horses, throw up our seedling beds by horse power, cultivate and dig our trees, and even prune the roots, by horse power. A tree grower in this country who depends on manual labor for growing his trees may make a good living if his land is rising in value, but not otherwise, as far as I know."

NATURAL HISTORY AND SCIENCE.

EDITORIAL NOTES.

Host Plants of the Mistletoe.—The very curious fact noted by the Gardeners' Monthly, that a tree popular with the mistletoe in one section will be avoided by it in another, is still a very interesting one, though we have had no additional facts of late. But the ***Bulletin of the Torrey Botanical Club*** gives a new one by the Rev. Dr. J. G. Peters, that at May's Landing, New Jersey, it is wholly confined to the Sour Gum, Nyssa multiflora.

Young's Flora of Texas.—Dr. Gray's Manual of the Botany of the Northern United States, gives all the flowers wild to the northern part of Virginia and east of the Mississippi River. Chapman's Flora of the Southern United States completes all south of where Dr. Gray's work ends. Coulter has given a Flora of Colorado, which takes in what Gray and Chapman do not touch; but there is still the large tract occupied by Texas and contiguous regions. Young's Flora of Texas fills this gap. A. S. Barnes & Co., of New York, have recently issued a new re-print of this, which will be of great service.

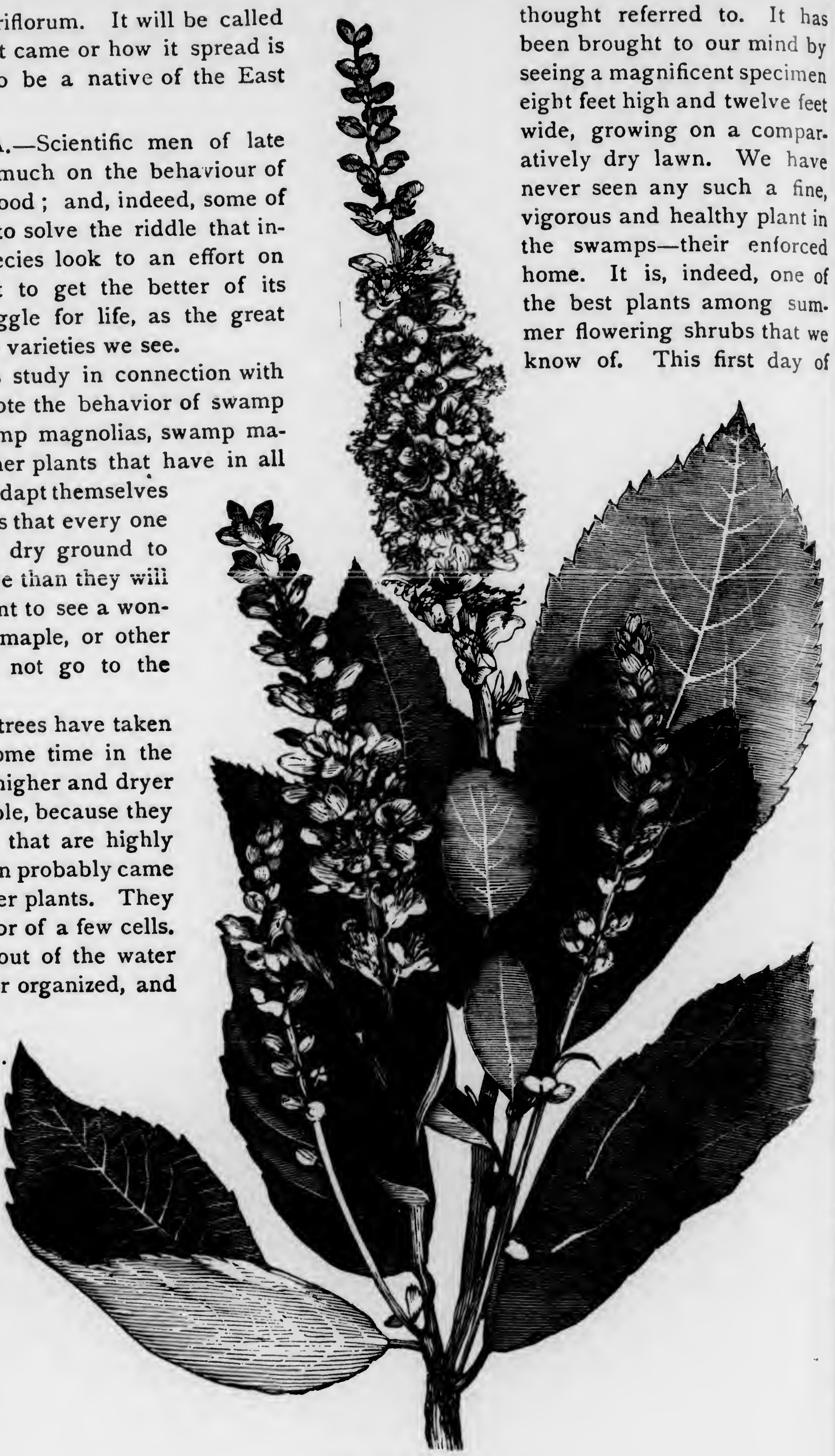
Indian Clover.—A plant from Japan, Lespedeza striata, has been welcomed to naturalization in the South, where it goes as Japan Clover. Another relative, equally welcome, has made its appearance. The *Farmer and Fruit Grower* says it is Desmodium triflorum. It will be called Indian Clover. How it came or how it spread is unknown. It seems to be a native of the East and West Indies.

Clethra alnifolia.—Scientific men of late years have speculated much on the behaviour of the plant for its own good; and, indeed, some of those who are striving to solve the riddle that involves the origin of species look to an effort on the part of the plant to get the better of its neighbors in the struggle for life, as the great factor in producing the varieties we see.

It is a very curious study in connection with these speculations to note the behavior of swamp plants. We have swamp magnolias, swamp maples, and numerous other plants that have in all probability learned to adapt themselves to swamps. Certain it is that every one of them will grow on dry ground to much better advantage than they will in swamps. If we want to see a wonderfully large willow, maple, or other swamp plant we do not go to the swamps to find it.

That these swamp trees have taken to the swamps at some time in the world's history, from higher and dryer ground, is very probable, because they are mostly of classes that are highly developed. Vegetation probably came into existence as water plants. They were of a single cell or of a few cells. They learned to live out of the water as they became better organized, and the higher forms were developed on the land. If now the higher forms are found in swamps, it would argue that these forms had returned to the swamps. It would be said that they had been crowded out by other vegetation and had learned to live in swamps, or else die out entirely from the face of the land, as there was no other place left for them.

This might be a speculation in the line of thought referred to. It has been brought to our mind by seeing a magnificent specimen eight feet high and twelve feet wide, growing on a comparatively dry lawn. We have never seen any such a fine, vigorous and healthy plant in the swamps—their enforced home. It is, indeed, one of the best plants among summer flowering shrubs that we know of. This first day of August it is the only thing in bloom among a large collection. It comes in just as the summer



Clethra alnifolia.

flowers go and before the autumn flowers come in. The long spikes of white flowers attract particular attention by the numerous black anthers, which suggests a sprinkling with black pepper, and may have suggested the common name of "Pepper Bush." We do not know what better guess to offer for the name. Besides all this the odor is delightful. Bees are extremely fond of it, and it ought to make an excellent substitute for white clover.

A few years ago Mr. Jacob Manning, the well known nurseryman of Reading, Mass., made a special effort to introduce it to general notice in garden work. We believe his efforts resulted in selling a very large number. We hope he is continuing the effort, for to have a plant on our grounds will be a source of pleasure few other shrubs at this season will be able to supply so well. It is generally up-hill work to get uncommon plants into common use, no matter how meritorious they may be, and the nurserymen who undertake to do it deserve every encouragement.

Vigor and Fertility.—It is important to distinguish in plants the difference between what may be termed the vegetative and reproductive stages in plants. It is within the every-day experience of the cultivator that so long as a tree is growing vigorously, it will not fruit. If a branch on such an unfruitful tree is "ringed" or in some other way injured, that branch is at once brought to the fruit bearing or reproductive condition. So far we see that there is an antagonism between the vegetative and the reproductive states. Now when the reproductive stage has been reached, we see again a subdivision. The part to which nutrition most freely flows produces most freely female flowers. The part to which nutrition flows less freely yields chiefly male flowers. Any one can see this who examines a larch, a spruce, or a pine.

So, when we speak of vigor promoting fruitfulness, we must be careful to remember about which condition we are speaking. Vigor is opposed to fruitfulness if by fruitfulness we mean the whole reproductive stage. Vigor favors fruitfulness when we are talking about a plant that has already reached the reproductive stage.

Planting Beans and Cucumbers.—Some people are continually asking, what is the use of knowledge? Cannot we raise beans and potatoes as well by doing as we have seen others do, as by stuffing our brains by knowing this thing and learning the other? It is difficult to answer these questions, because there are thousands of human beings on whom any knowledge, no matter how small, is absolutely thrown away. But we were reminded of the question by reading a paper by Prof. Byron D. Halsted on the Germination of Cucurbitaceous Plants. We believe he has given before a similar paper on Beans. The man who knows and doesn't need to learn more, puts his seeds of lima beans, squashes, etc., into the ground edgewise. Prof. Halsted, by that careful experiment and observation that is known as science, shows that this is a bad practice. The seeds should be laid flat on their sides; and yet there will still be some to ask of what use is science to the practical man?

Travels of the Japan Clover.—This tufty little plant, after having taken possession of many Southern States, is getting a foot-hold in Florida. Unlike many introduced weeds, it is welcomed everywhere. It will grow on dry or sandy soils where nothing else will, and cattle eat it with avidity. The seeds are so small and so few on each stem, that it has not yet got into the seed stores. Hence it seems to have a way of its own of getting along. Its botanical name is Lespedeza striata.

SCRAPS AND QUERIES.

Pollen from Rye Fields.—A Belvidere, N. J., correspondent says: "I desire to note a singular thing which occurred when I was out driving early in June. We were passing a field of rye; there was a gentle wind blowing. The pollen was being loosened and carried before the wind in such quantity as to exactly resemble waves of fog; indeed some parts of the field were obscured at times. This may have been often observed before, but it was new to me."

[Pollen in clouds from pine forests has been often noted. It will fall on lakes and sheets of water, till they seem coated with sulphur. No such note has been before made of the large quantity from a rye field.—Ed. G. M.]

The Snake Gourd.—A correspondent says: "Few people have any idea of the rapid growth of the fruit of the Snake Cucumber, Trichosanthes anguina. A plant growing on the premises of the writer, is bearing, at this time, two large gourds, one of which, by actual measurement, grew in twenty-six consecutive hours, 3⅜ inches. The seed of this vine was started in a pot in a greenhouse, and when about 6 inches high was planted out in the open ground. It now covers on an arbor about 12 to 15 square feet and the prospects are that before it is killed by frost it will cover four or five times as much space."

Smilax lanceolata.—We are obliged to our Summerville, S. C., correspondent, for expressing a doubt as to the correctness of the editorial note at page 228, that the beautiful vine she described as such a lovely ornament of her porch, was probably Smilax laurifolia. She now sends a specimen, which proves to be a neighboring species, Smilax lanceolata. The leaf is not so leathery as S. laurifolia—having more of the delicacy of the Smilax of the florists, which by the way is an asparagus and not a true Smilax. Both this and the laurifolia are well worthy of admittance into the regular stock catalogue of beautiful climbing vines for general cultivation.

How Wood is Made.—A correspondent sends us the following editorial from the London *Garden*, with the note that it might be of some interest to republish it for the benefit of American readers. It so happens that it has appeared—years ago—in the Gardeners' Monthly. It was written by the Editor of the Gardeners' Monthly—and its appearance as an "editorial" somewhere else ought not to give it any additional value. To oblige our correspondent we however republish it:

"In many trees the annual layers are so regular, and seem to be placed so nicely, that one not a botanist might be pardoned for believing that the sap was changed to wood matter in the leaves, and the new-formed matter sent down, sliding over the old layer like the section of a telescope; but, though the food was prepared by the leaves in a great measure, the actual growth was made by the germination of some of the cells along the whole outside wall of last year's wood beneath the inner bark. The germination of the cells takes place about the middle of June. Take a healthy cherry tree and strip it entirely of its bark to any length desired. At that season a viscid liquid will be found covering the woody surface in abundance. The stripped part is covered with a cloth to prevent evaporation, and in a few days numerous dots, like needle points, will be seen about the sixteenth of an inch apart all over the surface. These are the young cells which have germinated from those of last year. They continue germinating, one from the other, until they meet, when they unite and form a complete surface. In the autumn a layer of wood will be found just as thick as in the part of the tree not disbarked, and a single layer of liber, with its outer coat of cellular matter—perfect bark—will have been formed over the whole. The entire formation of wood and bark can thus be seen by the ordinary observer without the necessity of any nice microscopical work. Other people have tried the experiment with other trees. We have seen large apple trees that have had their bark peeled wholly off from their trunks, at the season named, make an entire new layer of bark and wood, not only with no injury to the tree but to its manifest enjoyment; but our own experiments were confined exclusively to the cherry. By this experiment we learn that there is no difference primarily in any part of the annual covering. The same cell may become permanent tissue, or generating tissue, and from the generative tissue may come, before the season of growth closes, every form of structure known to anatomists, from pure wood to the outermost cuticle of the bark. How these cells become differentiated may be passed over here. We know that cell growth is not always uniform in its operations. The law that changes the outermost series of newly made cells into liber need not necessarily operate so exactly as to make them perfect to this end—a few may be thrown off into the liber as generative tissue—and, granting this possibility, we see how the woody granules in the apple are formed."

Nemastylis coelestina.—"B. K. W.," Rayne, La., says: "I mail you to-day a pretty flower which looks like a purple Tigridia. I believe it is an orchid. Please name it."

[Right in your first guess as being near Tigridia—the Iris, and not the orchid family. Why has not this beautiful plant become common in cultivation? It would probably prove hardy a good way north. It has a blue flower as large as a quarter dollar.—Ed. G. M.]

Paper Mulberry.—"Morris," Pittsburgh, Pa., writes: "I mail you leaves of small shade tree under separate cover. The variation is so great that you will confer a favor upon me by naming it."

[Some of the leaves are as entire as a linden leaf, others are cut in as deeply as a fig. It is the Paper Mulberry, Broussenetia papyrifera. It was at one time very popular as a shade tree in cities, because it was a "fast grower," but like many things of that class people soon find that a comparatively slow growing tree, with good points, is worth much more than a fast tree without any. It is not unusual to hear it described as "the tree with every kind of leaf on it." The great variation is only on young or vigorous branches. A mature paper mulberry has entire leaves. This irregularity of foliage is common with many species of the mulberrry family to which these belong.—Ed. G. M.]

Red Spider on Arbor Vitæ. —"Thuja," Pittsburgh, Pa., writes: "The eastern sides of the Sib. Arbor Vitæ in one of our cemeteries are discolored to such an extent as to be noticeable as far as you can see them. I enclose sample. Can you name the trouble as well as the remedy?"

[A bad case of Red Spider. Syringe the plants with water and then sprinkle with sulphur. If one or two trees are particularly valuable, and worth a little trouble to save, hot water at 135° from an engine or syringe, if the hands can be protected, will instantly kill them.—Ed. G. M.]

Effect of Seed from Different Portions of the Plant.—A lady well known for her writings in connection with popular science, inquires: "For the sake of reaching general principles of wide interest in the study of natural history, I would like to ascertain the views of practical growers concerning the value of position with regard to seed. With this purpose in view, allow me to ask the following questions:

"1. Has your experience shown any difference as to the part of the plant from which you select your seed?

"2. If there should be a difference in favor of the main stalk, as compared with its lateral branches, what are a few of the families in which this difference is most conspicuous?

"3. Would your choice for securing vigorous growth be the same as that by which you would improve the quality of the fruit?

"4. If you wished to secure new varieties, from what part of the plant would you select your seed?

"5. Have you ever tried for several successive generations, the effect of planting seed from the top of the tree, say, for instance, in the peach, while at the same time a corresponding course of experiments was made with fruit from the lower branches? If so, what was the result?"

[Popular impression among cultivators is that there is some difference in quality in seeds from different parts of a plant. Some farmers are particular to get the corn from the middle of the best ears, and the largest and best tomatoes are saved for seed. But how far these impressions are warranted by carefully conducted experiments we do not know. Any thing from our readers would find a welcome place in our columns.

So far as the Editor's own experience is concerned he remembers but one careful experiment. It was with ten-week stock. An accident led to the belief that the seed from the central spike or shoot would give more double flowers than seeds from the lateral branchlets. On a test being made this was found to be actually the case.—Ed. G. M.]

Second Flowering of Orange Trees.—The *Florida Farmer and Fruit Grower* kindly says:

"If this should come to the notice of Mr. Meehan we hope he will give his opinion on these points through his Gardeners' Monthly. In questions involving the practical application of physiological botany to horticulture, there is no higher authority in America."

The subject may be explained by the following extract:

"It is a rare sight to see orange groves in blossom at this season of the year. The present prolific crop of blooms at this season is a source of surprise to even the oldest inhabitants. It is surely a novel sight to most of us to see the groves in as full bloom as we have been accustomed heretofore of seeing them in February and March. As the prospects heretofore for a good crop of oranges have been very poor, we all look upon these July blooms as a great blessing, and the orange grower is once more made happy. We see no reason now why we cannot expect as large a crop this year as during any preceding season. The blooms are large and healthy looking, very abundant and where they have dropped the little oranges are sticking and growing nicely. The second crop will doubtless be late in ripening, but then we may expect better prices for them."

The Editor regrets that he cannot offer an explanation with that precision which only actual experience among the orange trees would warrant.

We can only offer analogies: If a horse-chestnut tree which has its central (flower) bud tolerably well matured by August, has its leaves wholly destroyed by fire, as we often see them on city streets, the buds do not wait till spring to open but open at once. The trees are in full bloom in September.

If a branch of a pear tree, which is forming its flower buds for next year, in August have all its leaves eaten off by caterpillars, as sometimes happens, that branch will be in full flower in September and October.

In many places in the north the pear and apple are liable to be attacked in July and August with a rusty fungus known as leaf blight. In some seasons the leaf blight is so bad that nearly all the leaves fall. In these cases the trees put out the blossoms that would have otherwise remained dormant. Leaf buds also push into growth.

The inference from all these cases is that the tree has not had all the benefit from its summer foliage that it ought to have, and it tries to repair damages by hurrying into leaf again, and the flower buds push, of course, as well as the leaf buds.

It is no sign of a "mild autumn," as so many writers aver, that trees make a second growth of leaves and flower, but a sign that the first crop of leaves had been injured before they had fully accomplished their work.

Most likely some such law may be traced at work in the orange trees. But that is a question of fact, which only experience among them would settle. Here our second crop of fruits never come to anything. We know of no reason why they might not mature if the season were long enough. If the season is long enough in Florida, the oranges may ripen and be quite as good as the regular ones. The matter is worth watching closely. It is from these exceptional occurrences that we learn the most.

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

THE PEACH IN AMERICA.

BY LORIN BLODGET.

In the course of some historical researches recently undertaken, I have come upon the following paragraph in Kalm's "Travels in North America:"[*]

> "I have been told by all those who have made journeys to the Southern parts of Canada, and to the river Mississippi, that the woods there abound with peach trees, which bear excellent fruit, and that the Indians of those parts say that those trees have been there from time immemorial."

This was written by Kalm, August 2, 1749, in Canada. The French voyageurs never carried peach trees to the Mississippi.

Again, in Turner's History of Western New York he speaks of the destruction of fine orchards of apple and peach trees in the villages of the Six Nations, by Sullivan's expedition in August, 1779.[†]

These were fine orchards and they were not all destroyed. The writer grafted with his own hand several apple trees of the Indian's planting near Geneva, Seneca Lake, N. Y., in 1841—forty-six years ago—and he can testify that they were robust and vigorous trees, taking grafts readily. If the Lenni Lenape on the Delaware, the Six Nations of Central New York, and the Illinois of the Mississippi Valley, each and all cultivated peaches as early as 1700, if not from "time immemorial," is it not strong evidence that the peach is indigenous, equally with the Chickasaw plum, and the Catawba grape? See my communication in November number, 1882, page 347.

Philadelphia, August 2, 1887.

[Nothing is more certain than that the apple and the peach are not indigenous to America; it only then remains to investigate how these fruits got to this country so long before the observations of these writers were made.

Now when an Indian refers to times "immemorial," we must remember that the memories of people who have no written language do not go back very far. Indeed it has been determined that in about half a dozen generations the language of the Indian tribes will so wholly change, that two branches of the same stock, will in that time, not understand each other.

Aside from these considerations, the apple and peach trees referred to, have been traced to the early missionaries in Canada and Florida.—Ed. G. M.]

EDITORIAL NOTES.

The Lover of Flowers.—

He can behold
Things manifold
That have not yet been wholly told—
Have not been wholly sung nor said.
—*Longfellow's "Rain in Summer."*

Passion Flower, Constance Elliott.—There has been some dispute as to the origin of this comparatively hardy and pure white passion flower. It seems to have been a chance seedling from a lot of Passiflora cœrulea, raised by a gentleman named Napper, who gave a plant to Luccombe, Price & Co., of Exeter, England, who sent it out in 1885.

A Fruit-growing Settlement in Washington Territory.—A colony in which fruit-growing has been made a prominent feature has located on the shores of Puget's Sound, with promise of complete success. Mrs. Gallup, of Denver, and J. M. Grant, of Tacoma, names not unfamiliar to florists and nurserymen, are among the settlers.

Besides the bearing which such a settlement cannot fail to have on northwestern fruit culture and gardening generally, the Editor particularly commends it as in the interest of a dream he has—to see an all-rail communication with Europe before he dies. With the populous British settlement of Victoria, and the American Angelos close up to latitude 50°, it cannot be long before the short distance between Sitka and Behring Strait is reached, when the Russians would gladly meet us through Siberia at the same point. This future is far less dim than the railroad across the American deserts and mountains was a quarter of a century ago.

A Giant Asparagus.—The London *Standard* has been regaling its readers with an asparagus growing on the steppes of Akhal Tekiz, 5 to 6 feet high and as thick as a man's arm. There is no such species of asparagus in Northern Asia. If anything more than the production of the reportorial thought factory, which often turns out remarkable specimens of newspaper work, it may have been the stout shoots of an Aralia. The big, thick shoots of Aralia Japonica are used as we use asparagus, in Japan.

Quality in Fruit.—Though we half-apologized in our last for the common misuse of the word "quality" in referring to fruit, it might be as well to try to reform. For instance, speaking of the Gold strawberry, Mr. Hexamer says it is not so prolific as Jewell, but its quality is better. The bearing character of a fruit is surely among its good or bad qualities, and if flavor is meant by "quality" in the case of the Gold, it would be the best term to use.

Useful Herbarium Plants.—Mr. M. Buysman, of Middleburg, Holland, has started a very useful enterprise in preparing sets of dried plants to suit various objects. The farmer may, if he chooses, buy an herbarium of weeds; the druggist, an herbarium of plants used in pharmacy; colleges, plants suited to their various teachings; and the general botanist, anything he wants. Plants for physiological teaching, with the parts desired properly dissected and dried, are also among the articles offered.

Any one interested can correspond with Mr. Buysman at the address given.

Drought in the Northwestern Portion of the Atlantic States.—Only think of but eight-hundredths of an inch of rain over 75,000 square miles in ten weeks, and a torrid sun at that! That is the record up to this 8th of August. Horticulture and forestry everywhere will sympathize with the unfortunate. Millions of dollars' worth of timber has been destroyed by the forest fires. Though in such a time it would be too much to hope that fires would be wholly under control, there is no doubt that much of the loss is attributable to the utter indifference to the dead wood and brushy material that is lying everywhere to invite the first spark that comes along. It is hardly creditable to American foresight and energy that such things be.

Engelman's Flora of Missouri.—The manuscripts for a complete Flora of Missouri, were among the papers left by the late Dr. Engelman. These are being edited, and it is hoped the work will be ready for the press early in the coming spring.

Introduction of Chromo Lithography into the United States.—By the kindness of Mr. W. R. Smith, of the United States Botanic Garden, and of Miss Mumford, of Washington, the Editor some time since came into possession of a set of magazines very much in the style of *Flowers and Ferns*, of the United States, which, under the name of American Botanical Register, was issued at Washington. There is no editor's name nor any date; but we find from outside investigation that it was issued in Washington in 1831, and that the editors were Drs. Rich and Brereton. On one page of a fly-leaf, which has been preserved, it appears that the flowers were engraved by W. S. Pendleton, and then colored by hand.

The art of chromo-lithography has been of so much value to horticulture that in the belief that Pendleton was in some way instrumental in introducing the art, it occurred to us that it would be interesting to have the history of the art developed for our readers. We have the following letter from Mr. S. R. Koehler, of Roxbury, Mass., which we give in the hope that it will bring out further information in regard to the history of this very useful art:

"So far as I have been able to learn up to the present, the first specimen of work on stone in America was done by Bass Otis, of Philadelphia, and published in 1818. This, however, a little landscape, was engraved on stone, not drawn with lithographic crayon, and no one would suspect it to be from stone without previously knowing it.

"Barnett & Doolittle had a lithographic press in New York in 1822; but I have only seen some diagrams done by them, which may be pen-and-ink work.

"J. Pendleton (the brother of W. S., who seems to have been only a publisher) announced in November, 1825, in Boston, that he had studied the art in Europe, and introduced it, and in February,

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[*] Kalm's "Travels into North America." Translated by John Reinhold Foster. 3 vols. 8vo. vol. II. p. 243. Written 1749, published 1771.

[†] "O. Turner's History of (Western N. Y.) the Holland Purchase." Buffalo, 1849.

1826, formed a copartnership with his brother (W. S.), who had previously been in partnership with Abel Bowen, an engraver. Abel Bowen also took up lithography, and some of the earliest work done in Boston and published in 1825 bears his name. So far as I know, Pendleton was a born American, and went to Europe to study lithography.

"I cannot tell you when chromo-lithography was first practiced in the United States. Some of the earliest work really worthy of that name was certainly done by William Sharp, an Englishman, who came to Boston about 1848.

"I have for some years been trying to work up the history of lithography in the United States, but it is very difficult to get reliable information."

PROFESSOR J. G. LEMMON.—Mr. and Mrs. Lemmon, the arduous botanical collectors of the Pacific Slope, are summering in the rich but dry region of San Luis, Obispo county, California. They will return to Oakland, near San Francisco, about October, no doubt laden with rare botanical treasures.

PROF. C. V. RILEY.—The Pacific *Rural Press* of July 23d gives a portrait of Professor Riley, which is an excellent likeness and a good picture every way. It winds up an account of his life and services with the following paragraph, in which many besides the readers of the *Rural Press* will heartily join:

"Prof. Riley is yet in the prime of life. No one could fill his place, and thousands of people throughout the land will wish with us that he may yet be spared many years of health and usefulness. With so much accomplished, with so honorable a past, it is difficult to predict his future, or the good he may yet accomplish, for, as he is not yet 44 years of age, it is pleasant to think that his life is but just entering upon its best estate."

OUR GOVERNMENT ENTOMOLOGIST.—Prof. C. V. Riley, has again started for Europe.

JOHN M. SMITH—When a younger man, this gentleman contributed some of the most valuable articles that have appeared in our pages. Though in his sixty-eighth year, he is still hale and hearty, and doing good public-spirited work as President of the Wisconsin Horticultural Society. He is a New Jerseyman by birth, moving into Green Bay a year or two before the GARDENERS' MONTHLY was born.

SPENCER FULLERTON BAIRD.—When men like Agassiz, Darwin and Baird pass away there is little left for a monthly magazine to note; for in these days of newspapers and telegraphs the world's loss by their deaths is heralded at once to every household that appreciates the work which such men do. Yet it is but meet that a record should be made here of the departure of this distinguished man. Though not known among the lovers of horticulture, he did much, by his advancement of botany (his earliest love), ornithology, and the other kindred sciences, to make horticulture and the rural arts more intellectually enjoyable.

He was born at Reading, Pa., in 1823, and so early as his 23d year was made a professor in Dickinson College. He was made assistant to Prof. Henry in the Smithsonian Institution in 1850, and rendered valuable services in working up the scientific material for a number of the government exploring expeditions. In 1878 he succeeded Prof. Henry in charge of the Smithsonian. One of his strong points was his personal magnetism. In Congress it was usually enough that Prof. Baird wanted something, to ensure an appropriation. Men of all parties forget politics to help along such work as he thought proper to be done.

JOHN B. MOORE.—Grape and rose growers everywhere are familiar with the name of this gentleman. His death on the 22d inst. is announced, at the age of 70 years. The estimation in which his devotion to horticulture was held is attested by the fact that he has been president of the Massachusetts Horticultural Society. He has long been a member of the State Board of Agriculture. For the long period of twenty years he was Deputy Sheriff of Middlesex Co., Massachusetts.

ERWIN F. SMITH.—Mr. Smith has a well-earned reputation for a scientific knowledge of plant diseases, and of the lower forms of plant life. He has been appointed by the Department of Agriculture as a special agent to investigate the disease, known as yellows, in the peach.

PROFESSOR J. T. ROTHROCK.—Professor Rothrock, the well known explorer and botanist, on account of whose seriously bad health the University of Pennsylvania gave a year of absence, has returned home in improved condition, and will resume his labors in science teaching the coming term.

CHARLES L. WATROUS.—This well known nurseryman of Des Moines, Iowa, and president of the American Nurserymen's Association, was born at Cortland, N. Y., in 1837. He entered in the war for the Union as Captain of the 7th New York Infantry. With three bullet holes at the Battle of Bull Run in August, 1862, he was mustered out of service. After the war he settled as a lawyer at Winchester, Virginia. Suffering from his wounds he abandoned the profession, and in 1869 started his very successful nursery at Des Moines.

EDGAR SANDERS.—This well known and highly esteemed florist of Chicago, has been elected by the City of Lake View, in which suburb of Chicago he resides, one of the Board of Commissioners of Public Works. Lake View has now 40,000 inhabitants, and if they continue to get such practical talent as Mr. Sanders possesses, to rule them, while Chicago keeps the sort she has, it may not be long before Lake View becomes a rival to Chicago itself.

MR. JACOB BECKERT—the well known florist of Allegheny City, Pa., has retired from business and is succeeded by Mr. Theo. F. Beckert, formerly of Beckert Bros.

MR. WM. MEGGAT.—This gentleman, president of the American Seed Trade Association, was born near Drumlanrig Castle in Scotland—a place famous as a centre of horticultural learning. He came to America in 1859, eventually becoming connected with the great firm now known as Comstock, Ferre & Co., of Wethersfield, Connecticut.

Since he has been in business on his own account he has earned a high record for intelligence and probity, which has placed him in the honorable position that he occupies in the seed trade.

MRS. LOUIS GLOECKNER.—Among the successful florists of Albany, New York, this lady is prominent. In 1873 the late Louis Gloeckner bought out Mr. Ferguson, whose greenhouses were directly in front of the cemetery station. At that time they consisted of three old houses. Since then four new houses have been erected, and there is now a total of six. Mr. Gloeckner died in May, 1881. Since then Mrs. Gloeckner has had the entire management of the property. She has put up one new hot-house, built a new residence and outbuildings, added two acres to the property (at a cost of $500 per acre), which now consists of nine acres. The ability and prudence with which she has met responsibilities placed upon her by the sudden death of her husband are certainly creditable. She is at the head of an establishment which in the summer employs nine men.

Her work is chiefly devoted to the care of cemetery lots, sodding and planting. She has a few orchids, but a large general variety of plants, chiefly grown to furnish cut flowers, which are made into bouquets, designs for decorative purposes, parties, funerals, etc. The first house is devoted exclusively to roses, of which there is a large variety, grown to perfection. Other houses are devoted to carnations, camellias, geraniums, cinerarias, hyacinths, etc., and in one of them there is a bed of smilax which nearly fills the house. Mrs. Gloeckner has a large number of customers in Albany, whose wants she is enabled by means of the telephone to supply as promptly as if located in the city. Her florists are William Dunn, John O'Neil, M. Coyne and Mr. Neilman, with assistants.

L. G. BRAGG & CO., KALAMAZOO, MICHIGAN.—These nurseries were started in 1857, and have grown till they embrace now 250 acres. Their chief line is in fruits, though ornamentals are growing on apace with them. They do a heavy business by agents.

MILLER & YATES.—This firm of nurserymen and landscape gardeners, of Mount Airy, Philadelphia, has been dissolved. Mr. Charles H. Miller, who has attended to landscape gardening heretofore, continues the profession in his own behalf. Mr. Yates continues the nursery business.

ROHRER BROTHERS OF LANCASTER, PA.—The praise of one's neighbors is often more grateful than honors from abroad. The Lancaster papers speak in high praise of the florist enterprise of the Rohrer Bros., of whose fine set of plant houses the GARDENERS' MONTHLY has heretofore spoken. Their glass houses are spoken of by the acre, and steam pipe by the mile. They have purchased six acres more, attached to the former establishment, which is also to be covered with glass. The East End street passenger railway is mainly their enterprise and brings customers to their doors.

MILLER & HUNT.—The well-known firm of Miller & Hunt, florists of Chicago, have dissolved. Mr. Miller retains the old business.

HALLIDAY JACKSON.—Another of that remarkable band of Chester County botanists, which gave such an impetus to the study of the amiable science, under the lead of Dr. William Darlington in the last generation, has passed away in the person of Halliday Jackson, whose name frequently occurs in Darlington's *Flora Cestrica.* He died on the 6th of August, in West Chester, near Philadelphia, in his 70th year. He was a member of the Society of Friends, and took an interest in a wide range of the sciences, though he probably had a greater love for botanical than for other studies.

DR. WILLIAM HENRY RAVENEL.—Botanists and horticulturists generally will regret to hear of the death of this gentleman which occurred at his home in Aiken, S. C., on the 17th of July, after a protracted illness. He was born in the Parish of St. John's, Berkeley, S. C., May 19th, 1814. After receiving the usual high-school training, he entered the South Carolina College and graduated with distinction in 1832. Soon after graduation he engaged in planting or as it would be generally styled, farming, in St. John's, Berkley, and continued it for twenty years. Early in life he commenced his botanical researches, and his natural fondness for these pursuits was increased by an infirmity of hearing which cut him off from most of the ordinary occupations of life. In the course of his career he has steadily added to his Herbarium and has left in the possession of his family one of the most complete collections of both Phenogamous and Cryptogamous plants to be found on either side of the Atlantic.

He prepared several volumes of Fungi, called "Fungi Caroliniani Exsiccati" which were published in this country and attracted marked attention. He also acted as American Botanist in connection with his friend Professor Cook, of London, England, in preparing several other volumes of Fungi. These last were published in England, in editions of only one hundred copies each, which were bought with avidity by scientists at five guineas per copy. The net proceeds of these publications were remitted him by his friend, Professor Cook, but as the editions were small and the expenses of publication very heavy, the pecuniary profit was not great. In the course of his investigations he discovered many new species of plants, and more than fifty plants now bear his name in the botanical works of the day.

In 1869 he went as Botanist with Professor Gangee by appointment of the United States government to investigate the cause of the cattle disease then prevailing in Texas. A learned and elaborate report was published from the data obtained on this expedition, and it was ascertained that the disease was not due to the presence of fungi.

In 1849 he was elected correspondent of the Academy of Natural Sciences, of Philadelphia, Pa. In 1883 he was elected member of the Zoologisch Botanische Gessellschaft of Vienna, Austria, and in 1886 the degree of LL. D. was conferred on him by the University of North Carolina. For a couple of years he edited the agricultural department of the weekly *News and Courier* with great ability, and at the time of his death was botanist to the State Department of Agriculture.

Dr. Ravenel was married in 1835 to Miss Elizabeth Gilliard Snowden, of St. John's, Berkley, who died in 1855. By this marriage he had six children, four of whom survive, one a son living at Darien, Ga., and all useful and honored members of society. In 1858 he married Miss Mary Huger Dawson, of Charleston, who with five children, all daughters, survive to mourn their irreparable loss.

Dr. Ravenel moved to Aiken in 1853, consequently he has been a resident for thirty-four years.

The war swept away nearly all his property, but he met his adversities with Christian fortitude and courage, doing his duty faithfully unto the end.

In scientific matters he was very conscientious. Only a few months before his death, a question occurred in our magazine in relation to the power of some plants to set fruit without fertilization. Prof. Byron Halsted had found in his experiments that cucumbers would not. Dr. Ravenel thought figs would. In a private letter to the Editor he contended that in the South no fig had ever male flowers inside, nothing but female flowers, and yet the fruit — figs — freely followed. Because the Editor sent him a young fig in which a few male flowers could be discerned, he wrote requesting that his paper should not be published rather than risk the slightest inaccuracy.

EZRA WHITMAN, EDITOR AND PUBLISHER OF THE "MARYLAND FARMER."—The death of this well known gentleman occurred in Baltimore on the 13th of July. He was in his 75th year, having been born at Bridgewater, Mass., on the 7th of June, 1812. He removed to Baltimore in 1843 and established himself in the seed and agricultural implement business, and took a public spirited interest in everything connected with the interests of that city. The Maryland Institute, the Agricultural College, and the State Agricultural College are largely indebted to him for their origin and success. We believe the present Maryland Horticultural Society owes its existence principally to him. At least he paid a visit to the Editor of this magazine for the express purpose of consulting as to the best methods of again bringing it into existence. He left full of enthusiasm and determination to bring the event about. Some time afterwards he wrote that he had succeeded and invited the writer to the first exhibition. The meetings have been continued since. We mention these facts in detail, because, not being on the spot, it may be that others may have some claim to a share in re-establishing this excellent body. If not absolutely the founder, we can say that a large share in the work was absolutely his.

GEO. P. LAMB.—Landscape gardening and floriculture generally, in Wilmington, North Carolina, loses a good friend in Mr. Geo. P. Lamb, who, for so many years, was looked up to as an authority in these matters by the citizens of that place. When he attended the Florists' Convention in Philadelphia last year his many friends looked forward to many years yet of his pleasant company. He died on the 27th of July in his 61st year.

HENRI JACOTOL.—The *Garden* gives a portrait of Jacotol, who was a nurseryman at Dijon in Burgundy, where he died not many years ago. He introduced the famous Gloire de Dijon rose. It was a chance seedling.

LINDENIA.—This magnificent work, devoted wholly to illustrating and describing orchids, has just completed its second volume. The first part of the third volume will soon be issued, and the publishers announce that the parts of the next volume will appear with the same regularity that all the rest have done. The office will in future be at the personal dwelling of Mr. Lucien Linden, 100 Rue Belliard, Brussells, to whom the subscriptions, 60 francs for the volume in 12 parts, may be sent. The part before us has Odontoglossum, Coradinei var. grandiflorum, Phalænopsis Luddemanniana, Masdevallia Veitchiana, and Selenipedium caudatum. The pictures are of folio size and so naturally drawn and colored that one can almost imagine they smell the delicious perfume of the living flowers while looking at them. Now that orchid culture is becoming so popular with us, "Lindenia" ought to get many subscriptions from this side of the water.

PRACTICAL FLORICULTURE.—By Peter Henderson. Orange, Judd Co., 1887.

This is a "new and enlarged edition," and it is a pleasure to say that this is not to be taken in the sense in which such booksellers' announcements are often made—a mere word or two added here and there—but an honest and hard working attempt to give the experience of Mr. Henderson down to the latest date.

We often hear people discuss what has had most to do with the present prosperous condition of American floriculture; for, unbiased judges—in England especially — decide that American floriculture—we mean floriculture as a business and not simply as a part of gardening—stands in a very high position before the gardening world. There have been many causes for this, and we believe the efforts of the GARDENERS' MONTHLY to spread a knowledge of every thing that will give a charm to gardening have had their full share in the good work. But all will agree that Mr. Henderson's labors, and especially his work on "Practical Floriculture," have been of immense influence in the good work, and he may well feel proud of his share in the result.

DRUGS AND MEDICINES OF NORTH AMERICA.—Published quarterly by Messrs. Lloyd of Cincinnati. The last part has a figure of Lobelia siphylitica; Scrophularia nodosa; Laurus or Lindera Benzoin, the Spice Bush; Cercis Canadensis, the Red-bud or Judas tree; and Erecthites hieraciifolia, one of the Fire weeds. The treatment of the subjects not only includes a history of the use of the plants in medicine—but the full botanical characters are developed, and almost everything in the history of the plants treated of.

THE SEMI-TROPICAL PLANTER.—This is a new horticultural monthly, published by H. C. Cooke & Co., San Diego, California. Of course figs, oranges, bananas, and semi-tropicals generally receive a good share of attention.

THE CANADIAN HORTICULTURIST.—The types made us say the new editor of the *Canadian Horticulturist* is C. Woolverton instead of L. Woolverton as written.

TRANSACTIONS OF THE IOWA HORTICULTURAL SOCIETY.—From George B. Brackett, Denmark, Ia. This is the twenty-first annual volume, and is an excellent record of the progress of horticulture in that state. None of the numerous papers are very long, which by no means detracts from their value. As is quite natural in the newer portions of our country, fruit and vegetable growing receive a large share of attention, though forestry seems to be a growing interest.

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—Part II., 1886. We are under obligations to Mr. Robert Manning, Secretary, for the part that has just appeared.

CATALOGUES.—Augur, P. M. & Sons, "Gold" Strawberry List, Middlefield, Conn.; Deegan, Max, Jr., Dahlias, Roses, &c., Kostritz, Germany; De Smet Freres, Plant and General Catalogue, Ghent, Belgium; Kreinberg, Oscar R., Pansies and other Seeds, Philadelphia; Neubert, E., Price List Plants, Fall 1887, Hamburg, Germany; Salzer, Jno. A., Northern Grown Plants and Seeds, La Crosse, Wis.; Thorburn, Jno. M. & Co., Descriptive Catalogue Bulbs, 15 John St., N. Y. City; Van Geert, Aug., Trade List, 1887, Ghent, Belgium.

SCRAPS AND QUERIES.

Butterfly Weed. — "Mary" writes: "Can you tell me why the beautiful Asclepias tuberosa is called butterfly weed? I see no resemblance to a butterfly in the flower?" Our young friend might have seen butterflies on the flower. We never saw it in bloom but it had butterflies for constant visitors. We suppose it may have been from this fact that it derived the common name.

The Ravishing Snow Flower.—A Florida correspondent sends us the following paragraph, and asks, is there "any foundation" for it?

"The great botanist, Anthoskoff, found in Siberia, in 1870, the ravishing snow flower, the seeds of which he took to St. Petersburg, and which flowered in the presence of the Imperial family. This beautiful and impressive member of the floral kingdom is perfectly white, leaves, stock and flower, and it springs up to the height of three feet in three days! The plant possesses only three snow-white leaves and its flower; buds, blossoms and fades in twenty-four hours. It is in the shape of a star, about four inches in diameter, and possesses petals of great length. It exhales a slight and delicate odor, but if touched by a warm hand both it and the leaves and the stock on which they rest, dissolve instantly into a substance that seems almost pure snow. It would appear, indeed, that it was a kind of snow fungus, but it produces seeds which can be transported, and which when sown in the snow, readily come to maturity and produce flowers. It is frequently mentioned in Russian, Tartar, and Norse poetry, but up to its actual discovery by the botanist referred to, its existence had generally been considered fabulous."

[In the first place there is no "great botanist," Anthoskoff. Anthos is Greek for "flower"—and the whole thing is evidently made up by some clever newspaper reporter. It sprang up, we fancy in less than three days—probably three minutes were sufficient to bring into full maturity from the seed, as it fell on cerebral snow cap, where it was first found.—Ed. G. M.]

Storage Houses.—"H. H.," of Halifax, Nova Scotia, writes: "I cannot find in any book on horticultural buildings, how to construct nursery tree store-houses and instructions how to manage them. I would be obliged if I could have a leaf from the Editor's knowledge and experience."

[Nurserymen have to adapt these houses to the special wants of each business and the locality, and we fancy no two would want exactly the same building. The only point is, to build it so that the temperature will not be much above or below freezing. A little frost is better than to be much above, or the plants will sprout. If any of our readers who have been very successful with a storage house for general purposes, would kindly describe it, it would be appreciated.—Ed. G. M.]

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

The Holland Bulb Trade.—The Royal General Union for the cultivation of flower roots at Haarlem has held an extraordinary general meeting on June 20th, which was attended by a large number of its members, among whom the principal growers of bulbs and the principal members of the bulb trade. At this meeting the fact was considered that the unusual cold weather of this spring has caused all growing crops to be very backward; this unusual circumstance was discussed and led to the resolution that in consequence of this extraordinary season the flower roots and more particularly the Hyacinths most probably will not come to full maturity at the usual time, and therefore their exportations may be at a somewhat later period than usual.

Individual Horticultural Exhibitions.—We have repeatedly shown that with a few worthy exceptions, horticultural and agricultural societies have not progressed as the world has moved. The best people among amateurs neglect them, while exhibitors have to be almost tearfully besought to rake up something to fill the room. Yet there are exhibitors in numbers, if it were made their interest to bring out their products; and thousands ready to patronize any work of excellence in the gardening world.

Private parties are undertaking to do the work of exhibiting, independent of societies. The success of Siebrecht recently with orchids, and Elliott with Rhododendrons, show what can be done in this way towards educating an admiring popular taste. Franklin, Pennsylvania, is to have a treat of this kind at the hands of W. T. Bell, the

leading florist of that city, in the shape of a Chrysanthemum show. He has built a large show house of one hundred feet long for the special purpose of the exhibit. It will be heated by hot water in case of cold nights, which, during Chrysanthemum time, might reasonably occur.

There will be 150 varieties, and all grown as the best of skill could manage them. Though the affair will cost Mr. Bell many hundreds of dollars, he has such confidence in the excellence of his exhibit that he expects the whole world of Western Pennsylvania, with his wife and daughters, will go to see them, and that the small entrance charge will fully recompense him for his trouble.

The American Forestry Congress. — The Sixth Annual Meeting will be held at Springfield, Ill., on the 14th, 15th and 16th of September, on the invitation of the State Senate and the House of Representatives. The local committee are endeavoring to make the meeting a memorable one. The object of the society is the endeavor to impress upon our people the need of caution, economy, and a conservative management of our forest resources; the need of a timely beginning for future emergencies; the need of systematic planting for immediate effects in the treeless plains; the need of forest preservation on our hills and mountains. Those who can aid the society by membership, by papers, or by their presence at the meeting, may address Mr. B. Fernow, Secretary, Washington, D. C.

The American Pomological Society.—The following, dated from Zurich, Switzerland, July 23, 1887, will be very interesting to all our readers:

"I intended to have written you sooner, asking you to notice, in your August and September numbers, the meeting of the Pomological Society at Boston, September 14th. It will be an event of extraordinary interest to pomologists and fruit growers in all parts of our country, as the prizes offered by the Massachusetts Society will bring out a great display.

"Wherever we have been in Europe we find fruit culture substantially a neglected pursuit. As far as I can judge it does not receive as much attention as it did twenty years ago. All through Germany we got nothing but wild strawberries from the mountains; other fruits are scarce and dear. We hear a good deal of apple trees on the road sides. It is true, the trees are there, neglected and fruitless. An apple tree with its roots under the roadway on one side and old worn out sod on the other, cannot yield fruit fit to be eaten.

"I attribute this neglect of fruits to the prevailing necessity for using every foot of ground for crops, which are the necessaries of life. Cows take the place of oxen and horses, and the most rigid economy is practiced. Crops fine all through France, Belgium and Germany—apparent prosperity everywhere.

"If I had time I could tell you something about trees that would be of interest to you and many of your readers. A superb Sequoia gigantea is in the hotel garden here—fifty feet high and twenty feet in diameter of branches at base, a perfect cone, twenty years planted. I think we have seen a dozen nearly as good in other gardens here. Cupressus Lawsoniana is as good, and about same size and age. Thuiopis borealis, Abies Pinsapo, and many others finer than I have seen elsewhere.

"We shall sail for home on the 24th of August from Bremen on the Aller. We read in the papers here of a dreadfully warm period in the United States. We have not had more than three very warm days on this side. Yours sincerely,

"P. Barry."

Massachusetts Horticultural Society. — At the meeting on the 30th of July, the chief interest was the competition for sweet peas adjusted to a scale of points, as good horticultural judging should be. The name of the successful competitor has not been given us. There was warm competition between Mr. J. W. Manning and Mr. Wm. J. Martin, gardener to Nathaniel T. Kidder, Esq., in Herbaceous plants, each having about ninety kinds. In Mr. Wm. Manning's was a stem of Lilium superbum of the enormous length of 9 feet. Another remarkable feature so early in the season, was a fine collection of Dahlias from Mr. Fewkes. In the competition for native ferns in pots, Mrs. P. D. Richards had forty-one species, and Mr. Severance Burrage, forty. The third premium of Mrs. C. N. S. Hosmer, also had forty species. There were a number of exhibits of wild flowers, a pretty novelty being a white variety of Asclepias incarnata pulchra from Walter E. Coburn.

The display of fruit was good. B. G. Smith's two prize baskets of English gooseberries (Bangup and Whitesmith) were very fine. Mr. Smith also exhibited the Wilson Junior blackberry, which was tested by the committee and found rather deficient in flavor, and a basket of handsome seedling blueberries. Mrs. J. R. Simmons contributed blueberries, grown in Princeton, of remarkably large size. W. C. Eustis had a good dish of Red Astrachan apples. S. Hartwell's first prize dish of peaches (Waterloo) was excellent.

The vegetable department included fine peas, corn, potatoes and tomatoes, but nothing calling for special notice.

Society of American Florists.—As we go to press we learn that the meeting at Chicago was a very successful one. There were some fifty from New York and sixty from Philadelphia.

The address of the retiring president, Craig, was very well received. Mr. E. G. Hill, who formerly served officially as secretary, was elected president. Mr. Edwin Lonsdale declined a re-election as secretary.

An interesting incident of the meeting was a public welcome to Mr. Henry Bennett, of England, the raiser of so many famous roses, who was present on a visit from his country. His presence was announced amidst rounds of applause, that evidently disconcerted him. He broke down in an attempt to return thanks, at the warmth of his reception, and retired from the stage with tears, coursing down his cheeks. He is a chunky, blue-eyed, pleasant faced little gentleman, with iron-gray side whiskers. The thousands who have derived so much pleasure from his floral exertions will wish him many years of life to continue his useful services.

A Flower Show for Public School Children.—The following account of a novel idea is reported by the Isle of Wright (England) *Observer:*

"On Wednesday a very pretty little wild flower show, in aid of the Congregational Village Station Chapels, attracted a considerable number to Elmfield. The cost of getting up the show was inconsiderable, the prizes offered being quite sufficient to induce the school children to scour the country for miles in order to obtain bouquets of wild flowers, and as pleasure was afforded to so many by the little show we think it would be a good thing for our Congregational friends to extend their sphere of operations and hold the next show in Ryde, where, doubtless, much better prices could be obtained for the bouquets. Some of the children had obtained orchids rather rare in the Island. One little maid, named Sophia Joy, had a specimen of the bird's nest orchid, and must have wandered a considerable distance in the woods to have obtained it. The prizes offered for designs seem to have stimulated the inventive faculties of the children, one of whom, Alice James, was awarded a first prize for a very pretty jubilee design, the dates '1837–1887,' being arranged in tiny little white flowers on a ground of moss surrounded with a border of varied colored flowers. The judges were Mr. John Jolliffe and Mr. Scott Conacher, who awarded the prizes as follows: Class 1, for variety—1st, Mabel Sivell: 2d, Harry Leal; equal 3ds, E. Dallimore and Douglas Moore. Class 2, for tasteful arrangement and variety—1st, Alice Russell; 2d, Mrs. Loveland; 3d, Gracie Sivell. Class 3, for arrangement—1st, Edith Jeffrey; 2d, Sophie Joy; 3d, Alice Griffen. Class 4, for square bouquets—1st, F. Wheeler; 2d, Sophie Joy; 3d, Ellen Moorman. Class 5, for design—1st, Alice James; 2d, Ellen Moorman; 3d, Annie Grist. Class 6, for simplicity—1st, Mrs. Griffen. Mr. Councillor H. Pollard, of Ryde, distributed the prizes to the children with a few humorous remarks to each of them. Mr. Steward explained that the amount received on the last occasion they held a flower show was exactly £4; the expenses amounted to 8s, so that there remained a profit of £3. 12s, which sum was devoted to alterations made in connection with their outbuildings, so as to make them convenient for tea meetings. They had found great benefit from these alterations. The present show originated with a gentleman in Ryde, who offered to put down £5 toward the debt on the Congregational village stations, if they would raise a similar amount, and with the kind assistance of their friends they hoped to be able to do so. Mr. Conacher said that at their last show their pastor told them that there were too many Dutch cheese patterns amongst the designs sent by the children. They had remedied this, and had seemed to have gone into Egypt this time, most of the designs being pyramidal. He was sure he hardly understood how the children got such a collection together, and thought it did them infinite credit. The chairman suggested that next time the prizes should be given to the children who made up tasteful bouquets, and also gave the correct names of the flowers they contained. The meeting concluded with votes of thanks to the judges and the chairman. The sale of the bouquets realized very fair prices."

A Country Celery Show in England.—A correspondent of the *Garden* says:

"In a Lancashire town, which shall be nameless, I recently saw the advertisement of a Celery show, and a unique advertisement it was. Projecting from the upper window of a public-house, called the "Shoulder of Mutton," was a flagstaff, upon which were hung a dozen copper kettles, and at the extreme end a big bunch of celery. Nothing could be more suggestive, and it combined two eminent necessities in successful advertising—prominence and effectiveness. I learned that the show was to take place that evening; it was Saturday, and in due course I paid my twopence—which, by the way, was good for a pint of "drink" as I came out—to find the show in the long room of the house. Here was gathered together a remarkably good collection, not only of celery, but of potatoes and pansies, of cabbages and cucumbers, of fuchsias and fruit, vegetables and flowers. But the celery was decidedly in the ascendant. Behind the winning lots of this latter edible were the copper kettles, or britannia-metal teapots, the latter given as second prizes. The winning lot of untrimmed celery weighed 14 lbs., 4¾ ozs., and the corresponding victor in the trimmed class 9 lbs., 8¼ ozs. These weights will give some indication of the size, and from what I could see of the bunches they were tender and beautifully white. Nights and days had been spent in their culture; heaps of manure had been supplied to the ground around them, and doubtless during the week previous to the show, the grower had worked by day and set up all night watching his plants against the designs of some unscrupulous opponent."

THE

GARDENERS' MONTHLY

AND

HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

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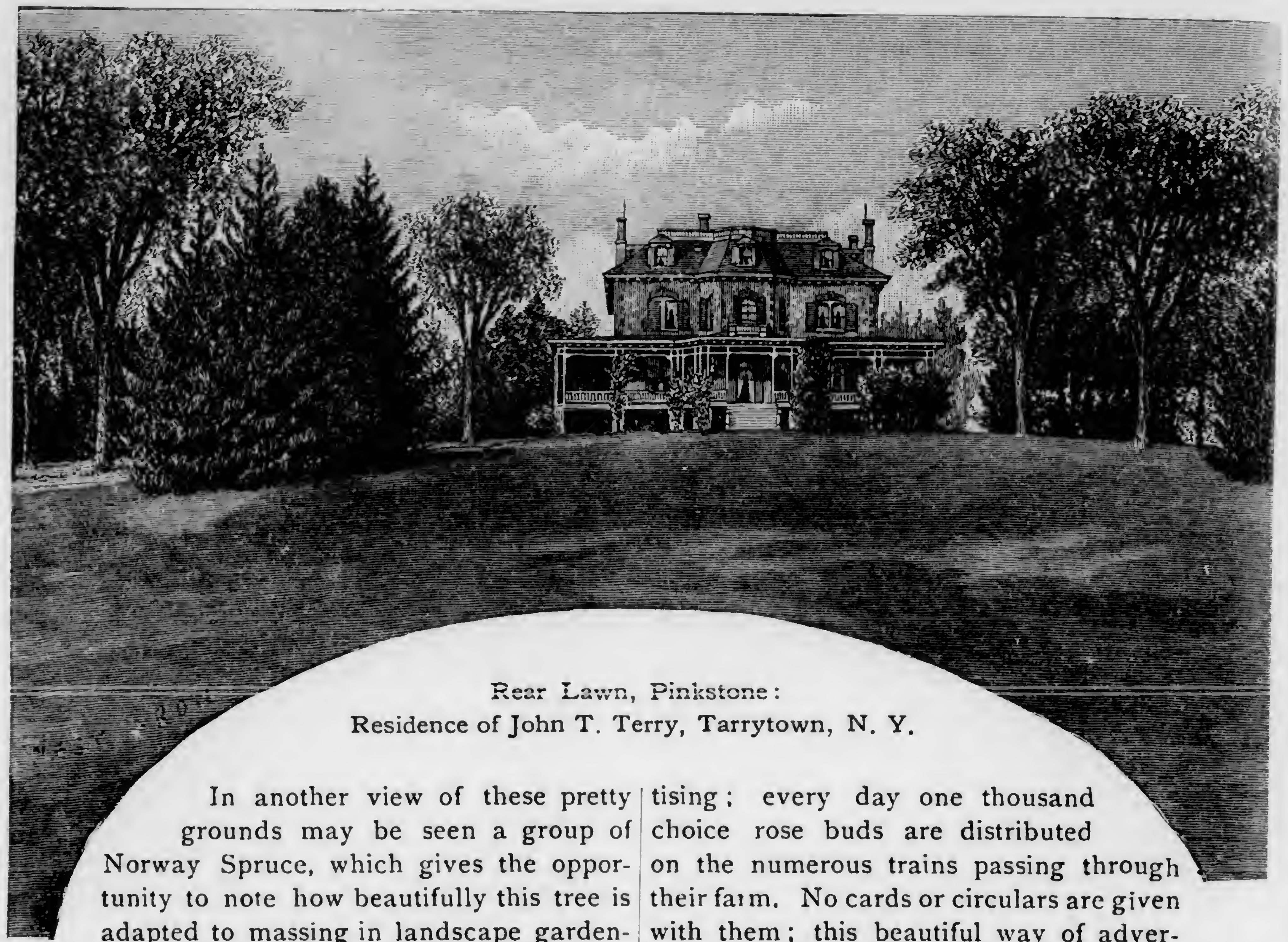
FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

In our last we gave some hints in regard to the laying out of grounds, looking to the effect planting might ultimately have on giving glimpses of different distant views, or of furnishing different aspects of the same view. As there noted, it is one of the greatest of the qualifications of a landscape gardener in laying out a place, to secure this, and a qualification rarely possessed by even some of the best. In the hope that this talent may be cultivated, we again give an illustration of the same thought in a view taken on the grounds of "Pinkstone," the seat of John T. Terry, Esq., of Tarrytown, on the Hudson River. When we look at this beautiful view of the river, and bluffs beyond, we can readily imagine how much the beauty of the grounds would have been marred had it been wholly shut out by injudicious planting. And yet one can not go anywhere without seeing errors in landscape planting, quite as egregious as this would be. It is, of course, scarcely credible that any one would deliberately plant out a bold scene like this; but there are innumerable features quite as handsome, where the error is continually made.



Rear Lawn, Pinkstone:
Residence of John T. Terry, Tarrytown, N. Y.

In another view of these pretty grounds may be seen a group of Norway Spruce, which gives the opportunity to note how beautifully this tree is adapted to massing in landscape gardening. Some of the best effects are to be obtained by grouping; yet this also seems unknown to many who have otherwise good taste in arrangement. We have in mind a very beautiful place of many acres in extent, where every tree out of the thousands planted stands by itself. On an eminence they look like a scattered flock of dark sheep. There is on that place a good deal of belting arranged. When the trees grow up, there will be woods and open spaces for the sheets of grass. The distinction between the woods and the grass will be very well outlined; but the effect would have been beautifully increased if there had been some groups of trees on the open, grassy places—groups such as this one of Norway Spruces indicates. These groups of Norway Spruce harmonize particularly with architectural features. In the view on front page the tops of these Spruces are seen forming a background to the house in the picture, and add considerably to the beauty of the house.

COMMUNICATIONS.

GARDEN NOTES FROM CALIFORNIA.

BY EMORY E. SMITH.

The Southern California Floral and Perfume Company has inaugurated a novel way of advertising; every day one thousand choice rose buds are distributed on the numerous trains passing through their farm. No cards or circulars are given with them; this beautiful way of advertising is expensive, but is greatly appreciated, and has created much favorable comment.

In Los Angeles, Cal., there is a climbing rose bush 60 feet high and 30 feet broad. Who has a larger? The bush occupies a large tree.

In Los Angeles county Delphinium cardinale, reaches perfection, it is the most brilliant of our wild flowers, and attains a height of 6 feet, is usually found in clusters of from three plants to an acre in extent.

While in Ventura last week, I had the pleasure of seeing the new Giant Perfection stocks, grown by Mrs. Theodosia Shepherd. They are undoubtedly the finest ever produced in this country or Europe. Mrs. Shepherd has a most interesting collection of plants.

California enjoys a complication of climates and conditions, and it is the writer's belief that there is scarcely a seed or plant known, that cannot, with ordinary care, be made to grow in some part of the State.

HYACINTHS.

BY MR. POLMAN MOOY.

I.

The Honorary Secretary of the Horticultural Club has invited me to say a few words upon

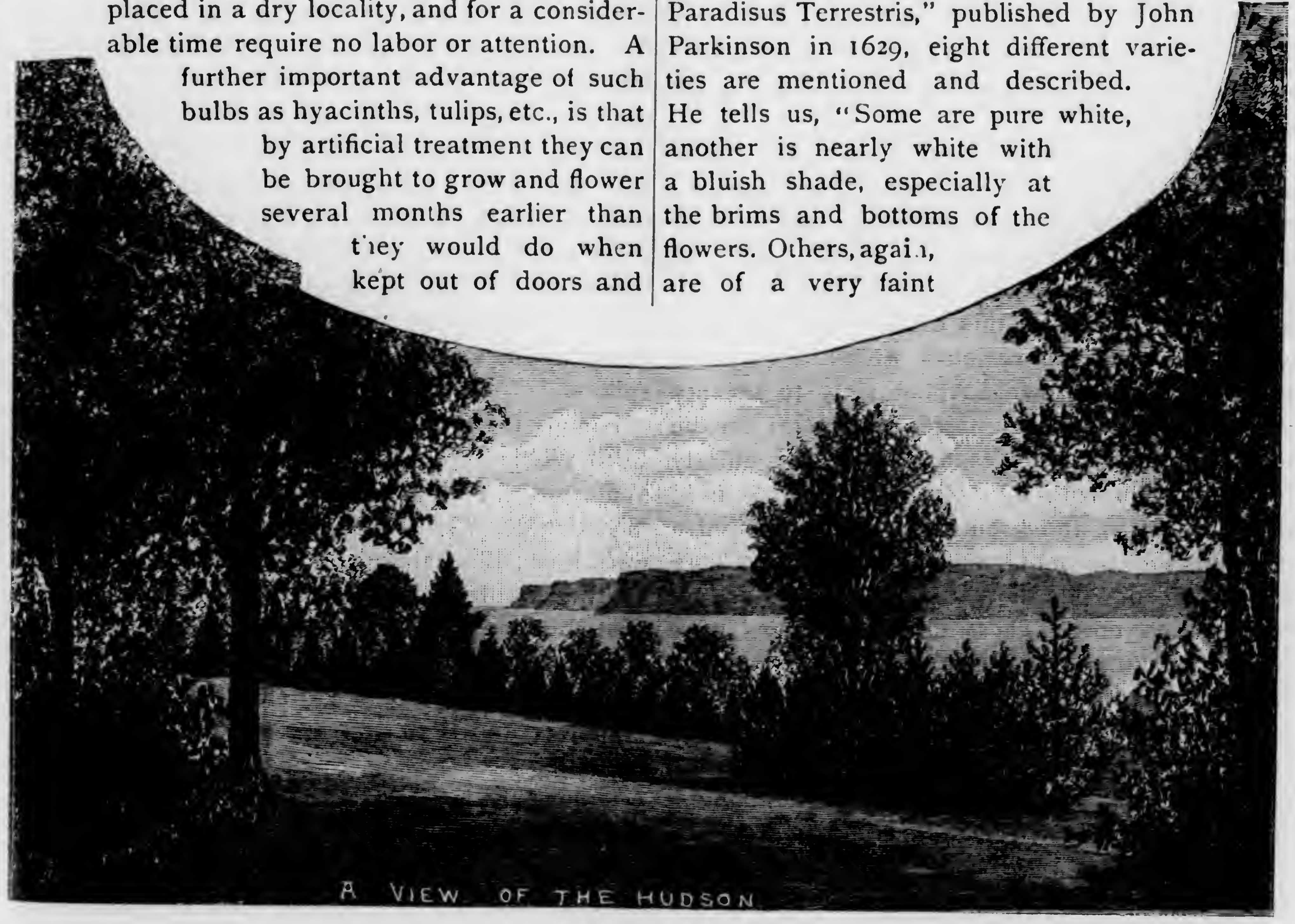
bulbs and bulb-growing in Holland, and feeling anxious to oblige the members I will endeavor to meet your wishes, but the subject has been treated upon so much before that I must request your kind indulgence.

Bulbs or flower roots have for over 250 years been grown and cultivated in the vicinity of Haarlem, and their cultivation has gradually increased in importance until it has reached its present position. Among the admirers and lovers of plants and flowers, bulbous plants have always found many ardent protectors. No doubt the great and constant advance which civilization has made in nearly all quarters of the world has greatly aided to extend the cultivation of flower roots and increase the demand, even in countries where, fifty years ago, there was not a single bulb, and where hyacinths and tulips were nearly unknown.

An advantage which bulbs have over plants in general is, that they have nearly all a yearly period of rest, when they can, without much fear of injury, be packed and exported to the most distant places. An advantage worth mentioning is that after they have done blooming and have grown to their full maturity they require only to be placed in a dry locality, and for a considerable time require no labor or attention. A further important advantage of such bulbs as hyacinths, tulips, etc., is that by artificial treatment they can be brought to grow and flower several months earlier than they would do when kept out of doors and left to their natural development, which for winter-blooming makes them unequalled by any other family among living plants.

I must mention first of all the much-beloved Hyacinth, as being not only one of the most esteemed among bulbs, but also one of the most beautiful, although at the same time the most difficult in cultivation and the most expensive to bring to perfection. The name of this genus originated with the writers of antiquity. Hyacinthus, a beautiful boy, was the son of a Spartan king and the favorite of Apollo. Zephyrus, being envious of the attachment of Apollo and Hyacinthus, so turned the direction of a quoit which Apollo had pitched while at play that it struck the head of Hyacinthus and slew him. The fable concludes by making Apollo transform the body of his favorite into a flower that bears his name.

The Hyacinth is a native of the Levant, and was first introduced into England in the year 1596; but it was known to Dioscorides, who wrote about the time of Vespasian. Gerard, in his Herbal published at the close of the sixteenth century, enumerates four varieties—the single and double blue, the purple and the violet. In that valuable book on gardening, "Paradisus in Sole Paradisus Terrestris," published by John Parkinson in 1629, eight different varieties are mentioned and described. He tells us, "Some are pure white, another is nearly white with a bluish shade, especially at the brims and bottoms of the flowers. Others, again, are of a very faint


A VIEW OF THE HUDSON

Distant view from Pinkstone.

blush; some are of a deep purple near violet, others of a purple tending to redness, and some of a paler purple. Some, again, are of a fair blue, others more watchet, and some of a very pale blue. After the flowers are past the stem bears a round black seed, great and shining, from which, after sowing and protecting, the new varieties can be obtained." During the 250 years that have passed since the above was published, there has been a steady improvement in the size, form and color of the flowers of this plant.

From the eight varieties of 1629 more than 4000 varieties have been produced, of which, however, the greatest number have become extinct or out of cultivation. Many have been thrown out to make room for the latest improved sorts, of which about 200 only are at present subject to extensive commerce.

The Hyacinth is a general favorite in the most extensive application of the word, and the varieties in colors of different shades from the purest white to the deepest shades of scarlet, purple, black, yellow, and violet, are fully equal to that of any other florists' flower. The Hyacinths are usually grown for forcing into flower in the dull cheerless months of winter and early spring, when their delicately colored flowers and rich fragrance lend a charm not otherwise to be obtained. They are equally desirable for planting in beds or in the garden border.

When looking over the cultivation of Hyacinths in Holland, which I have studied practically all my life, I must say that very great changes have taken place during that period in the taste and opinions of what a good Hyacinth should be; and, as a matter of course, this change has considerably influenced the varieties which have been propagated and grown. About sixty to seventy years ago there was a taste in general for the double flowering varieties, and more particularly for the flowers with dark or other colored bold eyes or centres, and I remember the time that a few beds sold by public auction realized very high prices indeed, while the varieties thus sold are not to be found now. These double varieties were mostly very small bulb-producers, which fact contributed very much to their being neglected and to their loss of favor in public estimation; while the considerable increase of trade and, (in consequence of this) also increased competition among nursery and seedsmen abroad, stimulated by the feeling of revival in all branches of trade at the fall of Napoleon, brought on a gradual alteration in the Hyacinth fancy, as every tradesman—excited by the competition of his neighbors—was looking out for the largest sized bulbs among Hyacinths, basing their trade recommendation upon the general but erroneous belief of the general public that naturally the largest bulbs must also produce the largest flower spikes.

The small bulb-producing varieties, however beautiful they might be, could not at that time find buyers, and growers were then compelled to meet the alteration in public taste as quickly as possible, and as this alteration in taste came rather suddenly and much quicker than the slow growth and propagation of the desired sorts could meet, prices at that time rose wonderfully high.

In this run after large bulbs among Hyacinths many sorts with very inferior flowers were brought out in quantity but although these large bulbs did increase the general trade, and so far gratified the tradesmen abroad by a greater sale and more profit, still they did not satisfy the amateurs, and better large flowers were looked after. After large-sized bulbs with large spike of flowers became the demand, the single-flowering varieties have been found more capable of giving satisfaction than doubles, and when we compare the large spikes of the present day with the sorts we had sixty years ago, we can only be well satisfied at the great progress we have been able to make. Although the double-blooming varieties are at present so much neglected, mostly because of their small-sized bulbs, there are some few double sorts which have pretty well maintained their position in public estimation, but their number is small compared with the large number of single ones in cultivation, and their very great beauty shall certainly keep them very long to remain the great favorites with lovers of very fine large flower spikes.

Among the esteemed double sorts I may mention Lord Wellington and Grootvorst, rose; Prince of Waterloo, La Tour d' Auvergne, and Florence Nightingale, white; Louis Philippe and Garrick, dark blue; Blocksberg and Rembrandt, light blue. Of the double yellow flowers Goethe is about the best, but most in this color are rather of small spike. Of dark red among the double flowers there are only very few varieties, of which Louis Napoleon and Waterloo are about the best, but the latter sort is not so full as might be wished.

Among the single varieties we at present possess the greatest variety of colors, and among them we can show superb large and handsome flowers, such as are Garabaldi, Pellissier, Scarlet Light, brilliant scarlet; Fiancée Royale, Gertrude, Koh-i-noor, Prima Donna, Von Schiller, red; Carlyle, Charles Dickens, Dr. Livingstone, Gigantea, Macauley, rose; La Grandesse, Alba Superbissima, Crown Princess, Madame Vander Hoop, pure white; Grandeur a Merveille, Baroness Van Tuyll, Mammoth, Seraphine, blush white; General Havelock, Baron Von Humboldt, Masterpiece, Mimosa, William I., black blue; Baron Van Tuyll, Charles Dickens, King of the Blues, Bleu Mourant, dark blue; Blondin, Czar Peter, Grand Maître, Leonidas, Grand Lilas, Lord Raglan, light blue; L'Honneur d'Overveen, Sir Henry Havelock, Charles Dickens, Haydn, violet; Ida, King of the Yellows, La Citronière, Obelisk, Anna Carolina, pure yellow; Beauty of Waltham, Clio, Lamplighter, Lord Palmerston, Argus, flowers with striking eyes or centres.

MILK IN MAPLE LEAVES.

BY J. W. L.

A contributor in the last number referred to the milky juice present in the leaves of the Norway maple. He will find the lacteal fluid present, and more copiously, in the Colchicum maple. As to this species, much admired by the writer, it may be added in passing, that the terminal young leaves which are of a red color, give to the tree when seen in the slanting sunlight, much the appearance of being covered with scarlet bloom. There is also, about the lower branches, an engaging dip and upward toss, as though they had had a mind to grow earthwards, but, on second thought had turned with a graceful curve toward the sky. The tree deserves to be more extensively grown than it now is.

[We endorse all that our correspondent says of the Red Colchican maple. It is, correctly, Acer lætum, a native of Japan, though introduced about a half century ago, as Acer Colchicum rubrum.

If we mistake not, the red of the young leaves is confined to vigorous shoots, or shoots of the second growth of the season. So that, to get the full beauty of the tree it should be set in good ground, where second growths will be abundant. —Ed. G. M.]

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EDITORIAL NOTES.

Bronson Park, Kalamazoo, Michigan.—This city has been wise in selecting for one of the special features of a public park one of the monuments of the past in an Indian mound. One by one these will disappear all over the land, except where some wise foresight, as here, has preserved them. All these historic works grow in value day by day, and those communities that take pains to preserve them are laying up future attractions that will add to their local renown.

The city is wiser than most of her sisters east and west in having a park at all, and still wiser in not being satisfied with this one, for she is planning to have a whole system, with the plots laid out, which one by one will be taken in as wanted.

The Drop Worm, or Basket Worm.—This pest, which makes for itself a nest out of the leaves of the tree it feeds on, and has these nests hanging on the branches like brown curl-papers over a lady's head, is so easily kept down by hand-picking before they get large enough to be very destructive, that there is not the slightest excuse for having valuable evergreens destroyed by them in our public squares and city parks, as we may so often see them.

When trees die from this cause city gardeners, or superintendents of public squares, should be promptly dismissed.

The Norway Spruce. — The *Rural New Yorker* has a number of correspondents discussing whether it is worth while to plant the Norway Spruce as an ornamental tree. In this part of the world, the vicinity of Philadelphia, it usually retains great beauty till about twenty or twenty-five years old. As soon as it commences to bear cones freely it often loses a portion of its beauty. But then the whole of the United States is much larger than the vicinity of Philadelphia, and there must be many places where the tree does not do so well.

Very few coniferous trees retain their early beauty after getting of full seed-bearing age. When it gets into a soil that suits it, and a situation it loves, the Norway Spruce will retain its pristine beauty longer than most coniferous trees. We often see poor and miserable specimens in comparatively young trees—so we do with all conifers.

Combining the Red with the Sugar Maple.—Mr. Levi W. Russell tells the members of the Massachusetts Horticultural Society that the red maple, also known as the swamp, and improperly as the white, maple is too little esteemed for ornament and shade. Alternating with rock maples, they form together a far more attractive row for the roadside than either alone. This arrangement breaks up the monotony and stiffness of a row of one kind only, and gives, especially in October, that mingling of gorgeous colors, of mellow tints and shades, so characteristic of the autumn foliage of these trees. A fine grouping of these two species is sometimes seen in nature, where a few tall rock maples form the center of a group, while the red maples, lower in stature, are clustered around. This tree is richly worth growing near our houses for the brilliant scarlet blossoms which precede the dainty leaves that in crimson tints soon follow. Though occupying many tracts of low and swampy ground, almost to the exclusion of other trees, it thrives well on high lands if started from the seed on similar ground. But an almost certain failure will be the result of setting in dry ground a maple or any other tree taken from a swamp.

THE PRIVET.—It is often a question what to plant under trees or in other places where the ground is so dry that few things will grow. The different kinds of privet will stand almost any hard treatment of this kind.

TAMARISK FOR THE SEASHORE.—For gardens in the vicinity of salt spray, the varieties of the Tamarisk are invaluable. A Tamarisk hedge in such situations is unique. The plant seems to enjoy salt spray.

BANANA FRUITING IN THE OPEN AIR.—Dr. W. N. DeVille, a druggist of Jefferson City, Mo., has a plant of the banana, Musa paradisica, which is bearing fruit. The bananas generally thrive pretty well in the summer climate of most parts of the United States, and they deserve more attention for out door decoration than they receive.

WATER LILIES.—The efforts of Mr. Sturtevant to make water plants popular show some good effect in the aquarium at Fairmount Park, where a number of species have been blooming beautifully the past summer, to the pleasure of thousands who have admired the "red, white and blue" in the flowers of the several species. They were mostly species of Nymphæa, the Nelumbium making good corner pieces for the square basin, by their taller growth.

CROTONS AS BEDDING PLANTS.—Among the novel features worthy of note in Fairmount Park are two beds of crotons and a bed of the bronzy acalypha. The crotons make a remarkably fine effect, as the warm orange-brown tints in so many varied shades are particularly pleasing.

The bed of acalyphas is pronounced by good judges as unique in beauty. This may have been aided by the bordering plants. The acalypha formed the main part of the mass, and then came a border of the purple eranthemum, which we have never seen used for this purpose before. The leaves are double the size of the purple irisene, so commonly used, and of the richest purple imaginable. Then followed a border of yellow coleus, finishing by one of alternanthera. Few combinations certainly could be more effective.

NEW OR RARE PLANTS.

PRUNUS PISSARDI.—It appears that this has rosy flowers as well as rosy leaves, which will give it an additional interest. It is a pity it was given a Latin name as if it were a distinct species, as it is only a purple leaved variety of the Myrobalan plum, of which the well known Mirser or Cherry is also a variety. The blood leaved cherry plum would have been a much better name, and the plants would sell better, as no one knows that Prunus Pissardi is any thing more than "some kind of a plum." It was found by Mr. Pissard, gardener to the Shah of Persia. His name in Latin has been well advertised, but it does not help advertise the plant.

PARSONS' WEEPING HEMLOCK.—The Hemlock Spruce has naturally a weeping character—that is to say, its branches droop by reason of the weight of foliage. In the variety noted above, the main branches turn over and droop as in the regular weeping tree. The original tree on the grounds of Mr. S. B. Parsons is represented by those who have recently seen it as a lovely object. It is now eleven feet high and has a spread of branches thirteen feet in diameter; a pretty illustration appears in the *Horticultural Art Journal.*

NEW ROSES IN ENGLAND.—A correspondent of the *Gardeners' Chronicle* says:

"Comparisons are out of place, but there are few orchids that would be chosen before a well grown forced rose bush in the spring months. The English-raised tea roses now compete successfully with the best of Continental varieties. Mr. Bennett, of Shepperton, has sent out, and has yet in his possession, many of superior merit. Cleopatra, exhibited at South Kensington and at Richmond quite recently, is of the President type, but the flowers stand erect, and the deep, shell-like petals of a rosy salmon color, and of great substance, surpass that good old variety. Princess Beatrice is quite distinct in character, but has proved to be quite as valuable as a summer rose as it had previously shown its merits for early spring forcing. The stems of many of the flowers of tea roses are not strong enough to hold

the flowers erect; Princess Beatrice has not this fault, but has as stout flower-stems as some of the hybrid perpetuals; the flowers are also full, and of the color of Madame Falcot. This fine variety received a first class certificate in March last at the Crystal Palace, and another first class at Richmond on June 29. As the rose shows are just commencing, it would be premature to comment on the new continental varieties until they are over, and information has been obtained from growers in distant localities."

NEW DAFFODILS.—Every little turn or twist in parts of the flower is now enough to stamp it as a new variety, till they have become so numerous that few can name any one now. As in the case of verbenas, petunias and similar things, the naming of new varieties soon gets over-done.

SCRAPS AND QUERIES.

SPIRÆA VENUSTA.—Mr. V. Burgevin writes: "I regret your editorial comment on the Spiræa venusta. Although the great extent of your botanical knowledge is sufficiently and generally recognized an error is not impossible to you, which may create doubtful opinions of the true nature of plants and a thought that I might be misled by enthusiastic love of horticulture, may find room in the mind of the public. The S. venusta made its first appearance in the catalogue of the most extensive nurseries of James Booth in Hamburg, (Germany,) in the third decade of this century and is described particularly as Spiræa venusta, altogether different from Spiræa lobata, by Dr. F. N. Bosse, 'Vollstaendiger Handbuch der Blumengaertnerei,' Hanover, 1842. This book comprises three volumes, and has been beyond doubt, one of the best books on horticulture in Germany; and it is, as any other proof you may desire, at your service. I am well acquainted with the S. lobata and have grown it ever since I can recollect, in my garden. Its roots sucker and it is easily cultivated; one root planted in rich soil will soon spread over 2 to 3 feet space and is beautiful when it blooms. The root of S. venusta is a solid one similar to the Erythrina. I can not account for its scarcity except from the lack of the art of propagation in former years; for this reason it may never have found the way to this or any country. Catalogues have but a small circulation, and therefore this as well as possibly other plants, remained strangers to many intelligent florists. Their foliage as you will perceive by the samples sent are quite different. The S. venusta I have and is now growing strong and healthy and answers all the characters of the genuine article. The form of the flower of the S. venusta is like the S. Lindleyana and is a deeper pink than the S. lobata. Next year when it is in bloom, if you and I are spared, I intend to satisfy you even if I have to bring a flower of it all the way to Germantown.

[We are very much obliged to Mr. Burgevin for this account. We never knew before where the name of Spiræa venusta originated, nor do we now know where is its native country. The class to which it is related should be American or Japan; but it is not referred to in Franchet and Savatier's recent list of the flora of the latter country, nor in Mr. Watson's Index of North American plants even as a synonym.

Mr. Charles Downing sent the Editor many years ago Spiræa venusta, insisting also that it was distinct from S. lobata, but when it flowered no botanical distinction could be discovered. The exact differences are now forgotten but the recollection seems to be that the petals and stamens were larger and brighter, rendering the venusta more showy for cultivation.—Ed. G. M.]

HARDINESS OF THE CALLA LILY.—"Mervine:" This will endure the winter any where in a pond of water, provided the water does not freeze deep enough for the frost to reach the roots.

CORNELIAN CHERRY.—A correspondent suggests that this pretty shrub deserves more attention. Certainly it does. The greenish yellow flowers though small, are attractive, and are among the earliest harbingers of spring; and the rich cornelian color of its cherry-like fruit in August, cannot be excelled in attractiveness by any berry-bearing shrub.

KEEPING BULBS OVER WINTER.—"Mrs. L. J. C.," Parnassus, Pa., writes: "As you so kindly answered my previous questions, I now make another request. Will you please, as soon as you conveniently can, give some instructions as to the best way of preserving, during the winter, the bulbs of Gladiolus, Bermuda Lilies, Amaryllis (summer bloomers), Dahlias, Hyacinthus Candicans, and especially Cannas, which I have never succeeded in keeping. Give directions as to material in which to keep them, temperature, moisture, etc., and by so doing you will probably oblige others beside your constant reader."

[Gladiolas are easily preserved, by drying, and keeping any where in bags, secure from frost. The whole class of Lilium longiflorum and eximium, to which the variety known as the Harris or Bermuda lily belongs, ought to be potted in the fall, and kept in a cool place as we would a hyacinth. We believe it is or should be hardy, and can be planted as other lilies are, in the open ground before frost comes. Summer flowering Amaryllis are easily kept over winter as dry bulbs, but it is best that they be not kept in a very warm place or they shrivel too much. Pot in Feb. or March.

Dahlias are cut back to the ground as soon as a white frost blackens the leaves, and are kept any where just as one would keep potatoes. Cannas can be kept dry, but rot if in too cool a place. It is best to have them in boxes of dry sand, stored away where the temperature does not fall below 45° or 50°.

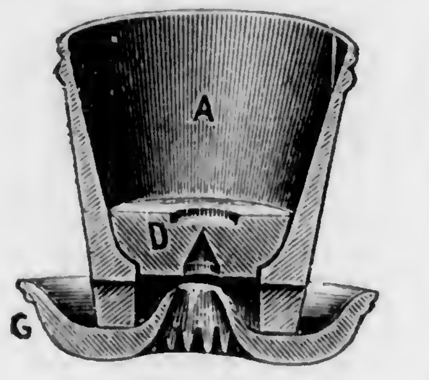
GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

IMPROVED FLOWER-POTS.—Mr. Geo. A. Burroughs, of Providence, R. I., brings to our attention a newly invented flower-pot that has some excellent points.

Every reader of the GARDENERS' MONTHLY knows by this time that it is just as essential that the roots of plants should have air as well as water; but, as flower-pots are generally made, the roots get water, but seldom get air. In fact, the plants so easily get water-logged that air is out of the question, and the plants actually smother, or we may more properly say drown, for want of proper drainage. The florist gets along fairly well. He sells his plants before they get large, and the over supply of water manages to get through the sides of the porous pots, if it cannot through the stuffed-up hole at the bottom. When the first-class plant grower wants to be sure of growing a good specimen, he has to take a small pot and invert it inside the larger one so as to provide for the proper aeration of the soil.

Mr. Burroughs provides a movable bottom, which is sufficiently above the bottom to always insure an air space. For house culture, where we do not want to have water slopping about, we must have saucers. He has so ingeniously contrived a saucer that the water will get into it and still permit a hole in the centre.



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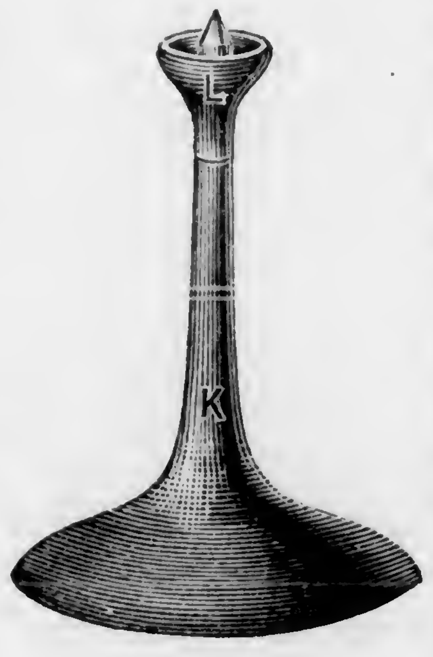

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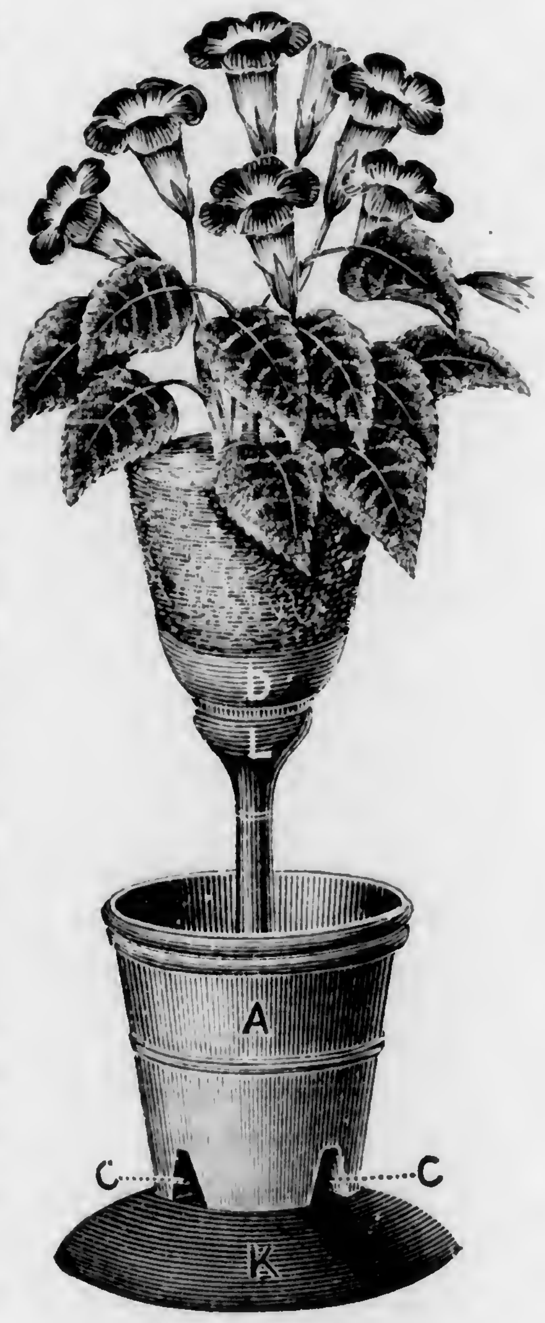

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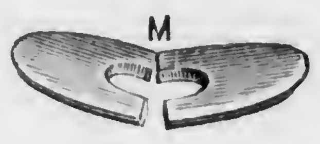

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COMMUNICATIONS.

PASSIFLORA KERMESINA.

BY CHARLES E. PARNELL.

The crimson passion flower, Passiflora kermesina, is a beautiful slender-growing stove or warm greenhouse climbing vine belonging to the Natural Order Passifloraceæ.

With the exception of P. racemosa princeps this is one of the most beautiful and free-flowering species, and one cannot but regret that nothing of its earlier history is with certainty known. All that we know is that it was introduced from Berlin into the gardens of the Royal Horticultural Society in 1831.

Although the plant is of slender growth, yet it is by no means a slow or delicate growing plant, for if properly cared for it will attain a height of some 20 feet, and flower in the greatest profusion during the spring and summer months. The flowers are produced from the axils of the leaves on long, slender flower stalks—the corolla and calyx being of a rich carmine color, while the corona or crown is of a purple hue. The leaves are cordate, cut into three lobes, and of a bright green color.

As a climber for the decoration of the greenhouse during the summer season this Passiflora is without an equal, for it can be trained up the rafters so as to occupy but little space, and in the winter, when all the sunlight possible is required, the branches of the plant can be trimmed back to within an eye or two of the main shoots, and in this way no shade is made, as so many object to growing climbers in the greenhouse on account of their shading the plants underneath during the winter months to their manifest injury.

This Passiflora is occasionally grown in the open air as a summer climber with very satisfactory results if given a deep, well enriched soil, and a liberal supply of water during hot, dry weather. Care should also be taken as to training the shoots so as to occupy the desired space while they are yet young; and as the plants are rather tender, they should not be planted out until about the middle of May. When grown inside this Passiflora does best when given a compost of two-thirds turfy loam, and one-third well decayed manure, with a fair sprinkling of sharp sand, and good drainage is also essential in the cultivation of this plant. It also requires quite a high temperature to do well—in summer not less than 65° and in winter 55°. Water should be freely given during its season of growth, and very little when the plant is in a dormant state.

Propagation is effected by cuttings of the half-ripened wood placed in sand and given gentle bottom heat, and if the young plants are liberally cared for nice specimens will soon be obtained; but be very careful not to overpot the plants while they are yet small.

The late Professor Lindley, in describing this plant, remarks that its flowers have a range of color which art cannot imitate. They are produced in great abundance, and at almost all seasons of the year, and in consequence of the length of the slender stalks from which they singly hang, the whole plant has a graceful appearance, which is unrivalled among Passifloras.

The generic name is derived from "passio," suffering, and "flos," a flower, referring to the filament or rays; and other parts of the flower being likened to the circumstances of Christ's crucifixion; and the specific alludes to the rich carmine or crimson color of the flower.

Queens, N. Y.

and kept in a cool place as we would a hyacinth. We believe it is or should be hardy, and can be planted as other lilies are, in the open ground before frost comes. Summer flowering Amaryllis are easily kept over winter as dry bulbs, but it is best that they be not kept in a very warm place or they shrivel too much. Pot in Feb. or March.

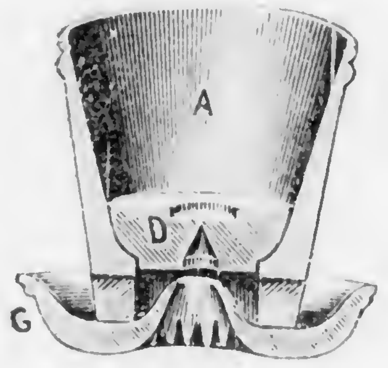
Dahlias are cut back to the ground as soon a a white frost blackens the leaves, and are kept an where just as one would keep potatoes. Canna can be kept dry, but rot if in too cool a place. I is best to have them in boxes of dry sand, store away where the temperature does not fall belo 45° or 50°.

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Improved Flower pots.—Mr. Geo. A. Burroughs, of Providence, R. I., brings to our attention a newly invented flower-pot that has some excellent points.

Every reader of the Gardeners' Monthly knows by this time that it is just as essential that the roots of plants should have air as well as water; but, as flower-pots are generally made, the roots get water, but seldom get air. In fact, the plants so easily get water logged that air is out of the question, and the plants actually smother, or we may more properly say drown, for want of proper drainage. The florist gets along fairly well. He sells his plants before they get large, and the over supply of water manages to get through the sides of the porous pots, if it cannot through the stuffed-up hole at the bottom. When the first-class plant grower wants to be sure of growing a good specimen, he has to take a small pot and invert it inside the larger one so as to provide for the proper aeration of the soil.



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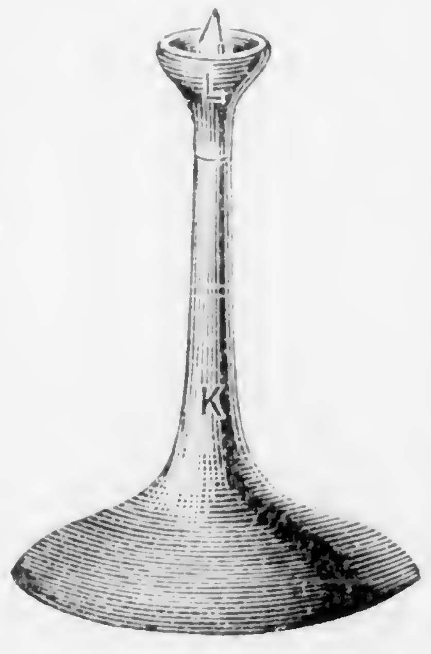

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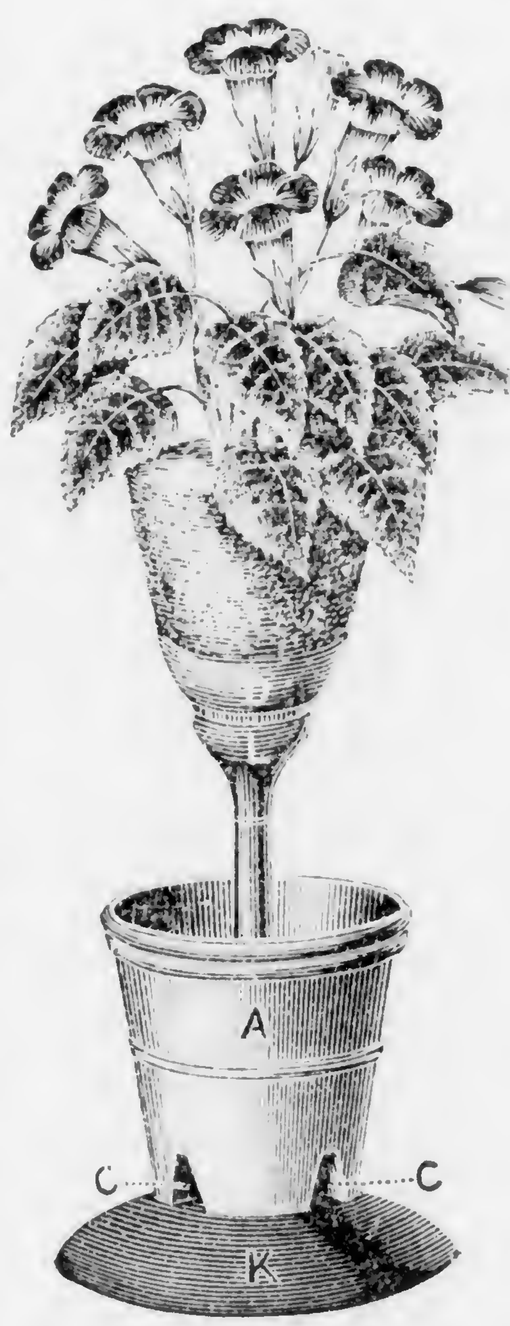

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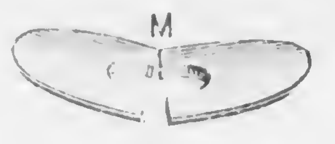

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EDITORIAL NOTES.

Hot Water for Killing Insects.—We believe the Gardeners' Monthly was the first to show that one of the cheapest and best modes of destroying insects on pot plants was to invert the pot and dip the plant for a few seconds in water warmed to 130°.

It is, after all these many years, the best plan for destroying insects, unless we have to deal with plants on a very large scale. We notice that the *Garten Zeitung* in referring to the plan, says that the azalea will stand 133° without injury. We usually heat the water pretty well and pour in cold till 130° is reached.

Oil and Mildew.—Those who are likely to be troubled with mildew would do well to remember Mr. Veitch's remedy of oil on hot water pipes is good against its development. Since Mr. Veitch gave that remedy to the public we find by research in chemical botany that oily vapor has long been known as inimical to the growth of the lower forms of fungi, and that Mr. Veitch's successful practice is in full accord with the teachings of this branch of science.

Glazing Without Putty.—No one uses putty over glass in glazing in America any more, but it is still used for bedding in the glass, but even this is unsatisfactory. It will often loosen and come out. Mr. Henderson recommends that thick white lead and oil be run along, and on this sprinkle dry light sand before laying on the glass. It is a much better plan than the old putty bedding.

Horse-Tails for the Florists.—Green ferny foliage that will not rapidly wilt as fern fronds will has caused a number of plants of the asparagus family to become almost indispensable to the florist. An addition to this class of popular florists' stuff has been found in Europe in the different species of Equisetum or Horse-tails. These have firm fronds that do not wilt easily.

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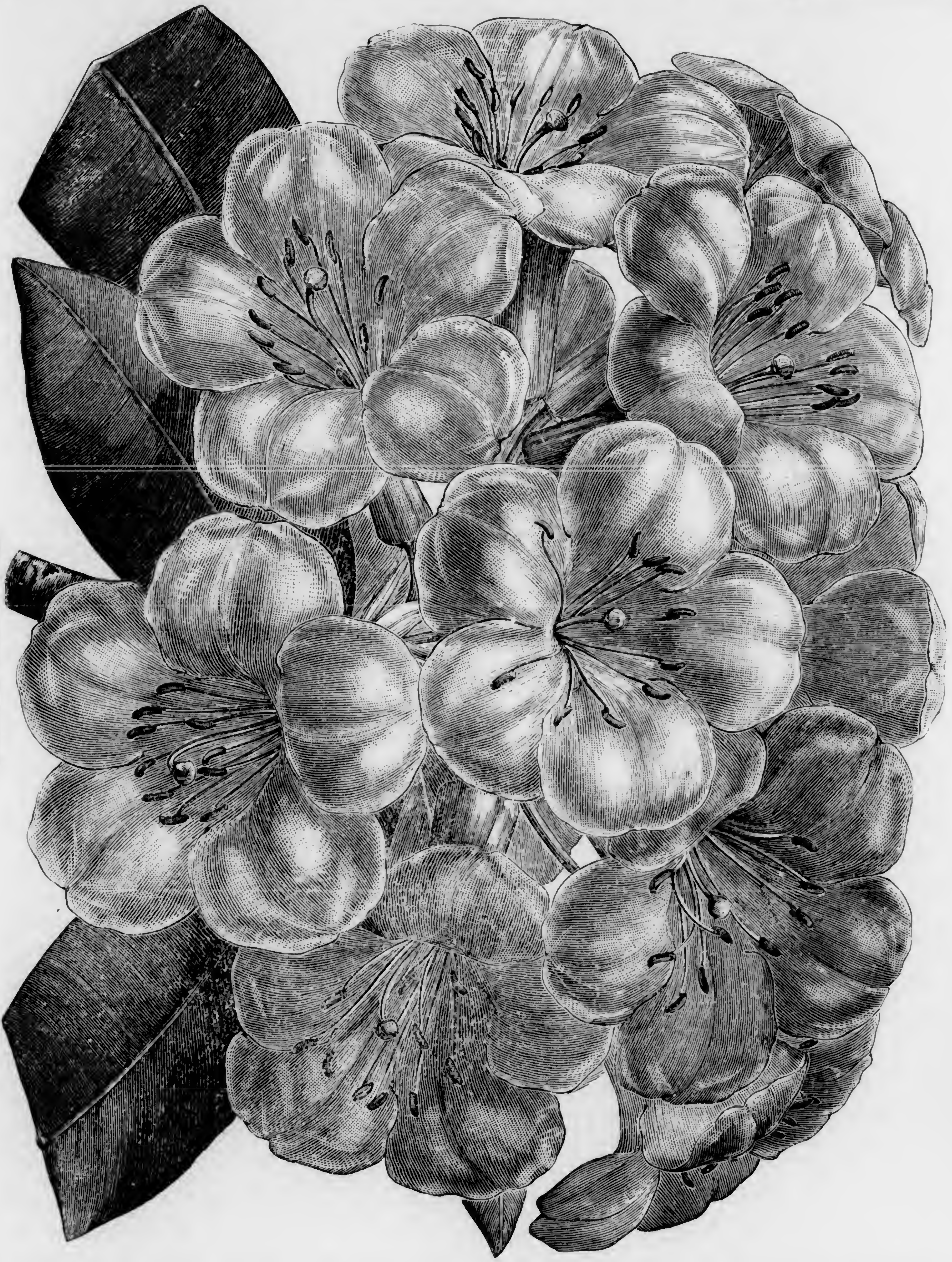
We give with this an illustration of one of this excellent class—a hybrid raised by those energetic florists, Messrs. Veitch & Sons, of Chelsea, near London, to whom lovers of flowers are indebted for so many good things. They furnish us with the following account of it:



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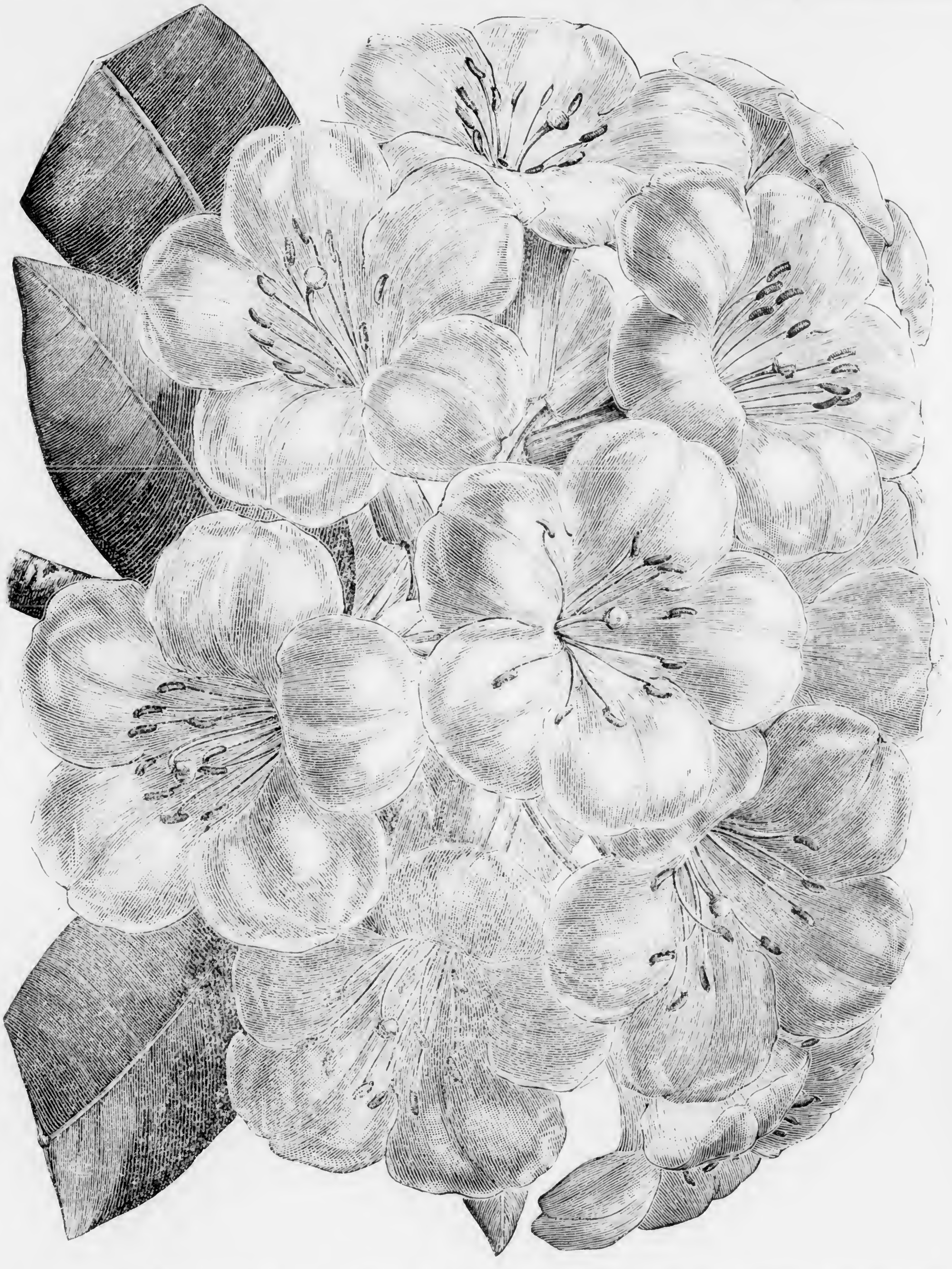

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INTENTIONAL SECOND EXPOSURE

"Rhododendron President is a plant of robust growth, and, at the same time, of compact habit; it is furnished with an ample foliage, and its trusses of showy flowers are among the best in the group. The flowers are large and of perfect form, the segments of the limb regular, of a clear deep buff-yellow tinted with rose towards the margin; the filaments are deep carmine-red, and being crowned with blackish crimson anthers, they afford a striking contrast to the richly colored corolla. First class certificate from the Royal Horticultural Society, June 24th, 1884, and a certificate of Merit from the Royal Botanic Society, May 19th, 1886."

SCRAPS AND QUERIES.

Reviving Wilted Cuttings.—A lady writes: "Do you ever put your wilted, dried up specimens into water as hot as you can bear your hand in and leave them for twenty-four hours? When quite a child I accidentally revived a lot of lovely exotics, and have since then frequently made use of the discovery with success."

[It is common with nurserymen when a tree or a cutting is received in a condition where the bark is wilted, to bury it wholly in moist earth. We did not know before that warm water is as good.—Ed. G. M.]

Mealy Bug on Stephanotis. — Mr. Albert Momme, gardener to R. W. Downing, Esq., of Wallingford, Pa., writes: "I should like to ask a question in regard to Mr. Wm. Lyne's article on 'Stephanotis floribunda. Mr. Lyne says by exposing the plant to the full effects of air and sun, the mealy bugs are kept off entirely and no mealy bug need apply. If this is the case with Stephanotis should it not have the same effect on other kinds of plants? I have some good-sized plants of Cycas, Musa, Strelitzia, Marantha, Alocasias, Latanias and Alsophila Austr., which are used for decorative purposes around the house, etc., all of which are in perfect good health and thriving condition, and all were perfectly clean when put out last spring, but have been more or less attacked by mealy bug during the summer, and consequently have had to be cleaned, so that it seems that air and sun do not affect the Wallingford mealy bug in the least.

"Among the above-named plants is a Cycas revoluta, which, although not west of the Mississippi, is as fine a plant as Mr. M. J. Nagel's. Distance from tub to first leaves, 7 inches; circumference of stem, 3 feet; length of old leaves, 3 feet 5 inches. There are eighty old leaves, all of which are of last year's growth. Length of young leaves, 3 feet 1 inch, of which there are forty-four. It pushed up and perfected two sets of leaves last year, and the increase in round-measure since May, 1886, is 8 inches. By the looks of the plant I expect that there will be a second set of leaves pushing up during this fall."

[We understood Mr. Lyne's idea to be that the heavy rains would wash off the insects from such a very smooth plant as the Stephanotis. In rougher or more woolly plants the rain would not have so good a chance.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

PEACH AND PLUM HYBRIDS.

The Cortical Layer Theory "Nailed," and the fact that Peach and Wild Goose Plums do Hybridize Demonstrated.

BY T. V. MUNSON.

In the Gardeners' Monthly for July 1887, p. 217, under the head of "Cortical Peculiarities in the Plum," there is evidently an intention to make an argument on the negative side of the "Peach and Plum Hybrid" question, based upon the one obscure subject of the Cortical Layer. However, there is more space in said article considering the flower and leaf peculiarities of some specimens of supposed peach and plum hybrids sent to the Academy of Natural Sciences of Philadelphia for examination, than to the consideration of their peculiar cortical layers, and the assertion, "It is due to science to say these specimens did not prove it," that is, that the peach and plum would hybridize, seems a little prejudiced, as the sequel will show.

From all the circumstances it is inferred that the specimens referred to were, at least in part,

originally sent by the writer to the Editor of the Gardeners' Monthly, and noticed by him in the Monthly for May. Hence, as "it is due to science," to have the exact facts in this important matter, for they involve an important subject in scientific horticulture, it falls to me to arise and give the facts, if I can, and let the reader say whether the theory that peach and plum do, or do not hybridize, is true.

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No person can draw such correct conclusions of the true character of these forms as he who sees them in their entire aspect growing among plum and peach trees of every species and numerous varieties, as has been the fortunate lot of the writer. To see them and know them is to be convinced beyond the shadow of a doubt. We have entirely too many "monstrosities" (as friend Meehan

"Rhododendron President is a plant of robust growth, and, at the same time, of compact habit; it is furnished with an ample foliage, and its trusses of showy flowers are among the best in the group. The flowers are large and of perfect form, the segments of the limb regular, of a clear deep buff-yellow tinted with rose towards the margin; the filaments are deep carmine-red, and being crowned with blackish crimson anthers, they afford a striking contrast to the richly colored corolla. First class certificate from the Royal Horticultural Society, June 24th, 1884, and a certificate of Merit from the Royal Botanic Society, May 19th, 1886."

SCRAPS AND QUERIES.

Reviving Wilted Cuttings.—A lady writes: "Do you ever put your wilted, dried up specimens into water as hot as you can bear your hand in and leave them for twenty-four hours? When quite a child I accidentally revived a lot of lovely exotics, and have since then frequently made use of the discovery with success."

[It is common with nurserymen when a tree or a cutting is received in a condition where the bark is wilted, to bury it wholly in moist earth. We did not know before that warm water is as good.—Ed. G. M.]

Mealy Bug on Stephanotis. — Mr. Albert Momme, gardener to R. W. Downing, Esq., of Wallingford, Pa., writes: "I should like to ask a question in regard to Mr. Wm. Lyne's article on 'Stephanotis floribunda. Mr. Lyne says by exposing the plant to the full effects of air and sun, the mealy bugs are kept off entirely and no mealy bug need apply. If this is the case with Stephanotis should it not have the same effect on other kinds of plants? I have some good-sized plants of Cycas, Musa, Strelitzia, Marantha, Alocasias, Latanias and Alsophila Austr., which are used for decorative purposes around the house, etc., all of which are in perfect good health and thriving condition, and all were perfectly clean when put out last spring, but have been more or less attacked by mealy bug during the summer, and consequently have had to be cleaned, so that it seems that air and sun do not affect the Wallingford mealy bug in the least.

"Among the above-named plants is a Cycas revoluta, which, although not west of the Mississippi, is as fine a plant as Mr. M. J. Nagel's. Distance from tub to first leaves, 7 inches; circumference of stem, 3 feet; length of old leaves, 3 feet 5 inches. There are eighty old leaves, all of which are of last year's growth. Length of young leaves, 3 feet 1 inch, of which there are forty-four. It pushed up and perfected two sets of leaves last year, and the increase in round-measure since May, 1886, is 8 inches. By the looks of the plant I expect that there will be a second set of leaves pushing up during this fall."

[We understood Mr. Lyne's idea to be that the heavy rains would wash off the insects from such a very smooth plant as the Stephanotis. In rougher or more woolly plants the rain would not have so good a chance.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

PEACH AND PLUM HYBRIDS.

The Cortical Layer Theory "Nailed," and the fact that Peach and Wild Goose Plums do Hybridize Demonstrated.

BY T. V. MUNSON.

In the Gardeners' Monthly for July 1887, p. 217, under the head of "Cortical Peculiarities in the Plum," there is evidently an intention to make an argument on the negative side of the "Peach and Plum Hybrid" question, based upon the one obscure subject of the Cortical Layer. However, there is more space in said article considering the flower and leaf peculiarities of some specimens of supposed peach and plum hybrids sent to the Academy of Natural Sciences of Philadelphia for examination, than to the consideration of their peculiar cortical layers, and the assertion, "It is due to science to say these specimens did not prove it," that is, that the peach and plum would hybridize, seems a little prejudiced, as the sequel will show.

From all the circumstances it is inferred that the specimens referred to were, at least in part, originally sent by the writer to the Editor of the Gardeners' Monthly, and noticed by him in the Monthly for May. Hence, as "it is due to science," to have the exact facts in this important matter, for they involve an important subject in scientific horticulture, it falls to me to arise and give the facts, if I can, and let the reader say whether the theory that peach and plum do, or do not hybridize, is true.

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No person can draw such correct conclusions of the true character of these forms as he who sees them in their entire aspect growing among plum and peach trees of every species and numerous varieties, as has been the fortunate lot of the writer. To see them and know them is to be convinced beyond the shadow of a doubt. We have entirely too many "monstrosities" (as friend Meehan puts it) coming together here to satisfy a good student of nature that that is the correct conclusion.

Botanical analysis in part of the species.—1. Amygdalus, Persica; and 2, Prunus Chicasa, including Wild Goose Plum; and 3, Seedlings of Wild Goose Plum, supposed to be hybrids.

(1) *Amygdalus, Persica.*—The peach; cortical layer not deciduous. Leaves, taste and smell, when bruised, strongly and distinctly characteristic of Prussic Acid. Wood smooth, non-spinous, leaves long lanceolate, petiole short, ¼ to ½ inch, thick, generally winged along the groove bearing round or reniform glands 2 to 6 in number, when the margin of leaf is crenate, or blunt-toothed; but when sharp-toothed, or serrate, then the petiole is glandless. Blade of leaf from 4½ to 7 inches long by 1 to 1½ wide, venation open as compared with Chicasa. When young, but fully grown, leaves, ribs, petiole and young wood (when not exposed to sun) yellowish green in color, never crimson or purple as in Prunus Chicasa. Young wood in sunlight becomes bright crimson, petiole margins and ribs smooth, not pubescent, as in the Prunus Chicasa. Bloom buds large, roundish, usually in pairs, with wood-bud between, and not all surrounded by an outer ring of scales as in Prunus; sessile, or nearly without peduncles, arranged along the last season's branches, not on special fruit spurs, as mostly the case in Prunus Chicasa. Flowers generally open a little later than Wild Goose, but partly at same time, of a rose or crimson color in petal (rarely white), and sometimes nearly apetalous, similar to Blackman plum.

The fruit may be free or cling, fuzzy, or smooth, as in Nectarine, white or yellow flesh, with or without red in flesh or next stone. When flesh is yellow, leaves and young wood of a deeper tint of yellowish green. Seed large and corrugated. Native of Persia and adjoining parts of Asia.

(2) ***Prunus Chicasa.***—Cortical layer, deciduous, almost entirely, at two years age in wood. Leaves and bark have a slightly astringent and bitter taste, but no noticeable flavor or taste such as found in the peach. Color of leaf dark glossy green; petiole and young wood in all small-leaved Chicasa varieties, of a dark crimson; in the large-leaved, crimson petiole, and crimson, or reddish brown young wood, and all are more or less furnished with sharp spurs or spines, which chiefly bear fruit buds. Petioles usually ½ inch or more long and slender, with very small, usually 1 to 3, rarely 4, glands, midrib and ribs minutely pubescent, and more or less red, never pale or yellowish green. Blade of leaf in small-leaved class, from 2 to 2½, rarely 3 inches long, ½ to ¾ wide, very dense in texture, glossy, dark green, venation very fine and close. Blade of leaf in Wild Goose, Indian Chief and other large-leaved Chicasa varieties much like the small-leaved, except in size. Glossy, compact texture, close, fine venation; from ¾ to 1¼ inches wide by 2½ to 3½ inches long, rarely 4 inches. All Chicasa varieties are profuse and certain bloomers, and have peduncles from ½ to ¾ inch long and slender. Fruit red or clear yellow, smooth, with a very delicate bloom, always a cling, with smooth seed. Native of Southern United States.

(3) *Supposed Hybrids of Peach and Wild Goose Plum—General Remarks.*—All named below were grown from seeds carefully saved from trees of Wild Goose Plum, and so carefully planted and observed that there is no question of their being seedlings of Wild Goose.

Blackman Plum.—Habit of growth much resembling peach. Growing tips, young wood, mid-rib and ribs of leaf of a yellowish green, quite like peach. Venation about medium, between Wild Goose Plum and peach, easily observed by holding all at once in front of a good light, and looking through. In taste and odor strongly like peach, so that it is an easy matter, blindfolded, to tell the Blackman trees in the plum orchard, simply by taste and smell. Tree smooth throughout, with thick, fat twigs like peach, not slender and wiry like Chicasa plums. Bloom buds larger than any known Chicasa, in pairs along branches like in peach, not generally on spurs as in Chicasa, sessile, or with no more peduncle than in peach. When not prematurely cast off, as generally happens, they bloom later than most Chicasas and about with peach. Petals mere scales, with rosy margins (same color as in most peach flowers, not snow-white as in all Chicasas). Essential organs abnormal generally. Sometimes produces a fine plum-like fruit. Cortical layer only partially deciduous second year, and never entirely, as in Prunus; rather more like peach in this than plum.

Petiole thickish, ½ to ¾ inch long, slightly winged as in peach, with pubescence along wings and ribs as in Wild Goose. Glands 3 to 6, medium in size, globose. Blade 4 to 6 inches long, 1¼ to 1¾ wide, not more glossy than peach, but of an intermediate shade of color between peach and Wild Goose Plum. Body and branches more the color and appearance of peach than Wild Goose Plum.

The *tout-ensemble* of the tree in orchard is decidedly more peach-like than plum, so that visitors generally take it for peach. Nos. 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, (of which a leaf of each was sent the Editor for identification) also some twenty others, all grown from Wild Goose seed, are easily distinguished from any Chicasaw variety by the distinct peach taste, odor, and tinge of yellowish green in leaf. But they vary greatly among themselves. Their petioles are all shorter than in Wild Goose, (No. 1, among leaves sent Editor) but not quite so short as peach, some are a little winged as in peach, some have reniform glands same as in many varieties of peach, but never seen in any Chicasa. Some have no glands and serrate margin of leaf, same as in many varieties of peach, but never seen in the thousands of Chicasas examined. Nearly all which have glands have them larger than in Wild Goose. The blades of all are more lanceolate than in W. Goose, approaching peach greatly in this respect. The trees of all have none, or few spurs or spines as found in Wild Goose, but are generally quite smooth, and young wood, more or less yellowish green with crimson on upper side, or in sunlight, as in peach, rarely so dark crimson-purple all round as in nearly all Chicasas.

In general aspect and habit all these trees strongly resemble peach. In some, the cortical layer is deciduous as in Prunus, in others partly deciduous, in others permanent, as in peach. In all so far, which have ever formed bloom-buds, they have cast the buds unopened, without apparent cause, just before blooming time.

The four-year-old lot have all become sickly, and part have died, while all of the lot showing only Prunus characteristics are vigorous, and have fruited. In the second lot the supposed hybrids are much more vigorous than first lot, probably owing to having better male parents among the peach which fertilized the Wild Goose producing the seed. I hope to see several of this lot fruit, as they seem so vigorous and perfect as trees.

Final conclusions.—They are not monstrosities, but certainly hybrids, as the above analysis proves if it proves anything, and no person of observation and botanical knowledge will for a moment hesitate from this conclusion when he sees the trees growing among peach and plum, as I have. To conclude otherwise, is to ignore characteristics in botanical analysis. Friend Meehan, now come down off the fence on this question. I once was there, but the above, with other facts, knocked me off.

The question of fertility among hybrids, is an entirely separate one. I know many hybrid plants very fertile, others quite sterile. Between peach and plum, however, the facts so far go to show their hybrids sterile generally. Among grapes, the hybrids seem generally the most fertile. I have grown many hundreds of these.

[This paper came to hand last month after our remarks went to press, and we wrote to the author, that perhaps he might like to revise what he had written after seeing what we had said in reply to his former note. Not having any word since, we infer no change is desired, so we insert it as received.—Ed. G. M.]

NOTES FROM ROCHESTER.

BY T. T. SOUTHWICK.

Burning over Strawberry Beds.—I am told that some market gardeners in this vicinity, have been very successful, in renewing and invigorating their strawberry beds, by burning them over. I understand that they sprinkle straw over the bed, soon after the season's crop has been gathered, and set fire to it. I have seen no beds so treated, but hear that very good results follow this rather queer treatment. It may not be a new idea, and may not have any value. I send the item for whatever it may be worth to the readers of the MONTHLY.

Old Seeds versus New Seeds.—An item in the September number recalls an experience I had some years since, when a large grower of pear seedlings. Some French pear seed being left over, they were packed in water, and air tight tin cases, with charcoal dust, and buried in a cool spot several feet in the earth. The following spring they were properly treated, and planted. The germination was nearly as good as fresh seed, but slower.

Planted side by side with new seed, the difference could be easily told, as far as they could be seen. The foliage on plants from the old seed was yellowish green white; the foliage on the plants from the new seed was dark green, and the plants averaged one-fourth larger when dug.

How to Keep Seeds.—I hardly suppose any reader of the MONTHLY is not aware that in seeds containing oil—and all fruit and nut tree seeds are rich in oil—the principal reason of failure to germinate, is due to the oil becoming rancid. Seeds kept from air and moisture, and cool, will germinate nearly as well the second year as the first. The plan I refer to above I found a very good one

Fruit Crop in Western New York.—I have recently been through the apple counties, and the crop seems good in quality, and quantity. All crops are fully half a month ahead of the average season, due to hot and dry weather.

Rochester, N. Y.

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EDITORIAL NOTES.

Clean Culture for Fruit Trees.—They are having the same discussion over clean culture or grass culture for orange trees that we in the North once had over our orchards. They will see, as we have had to learn, that it is a broad question, and that when we get to the extremes both or either may be right.

In grass culture we encourage the feeding roots near the surface, which is a great gain; we keep the hot sun from raising the temperature of the earth above 80°, which is also a great gain; and another great gain is that we keep the frost from penetrating deeply in winter time. Continual hoeing or plowing destroys innumerable surface roots and costs for extra labor, which even a "hoed crop" scarcely compensates. Grass, on the other hand, requires little care but cutting and curing.

But the objections are that when there are two crops on the same ground there are two sets of growing things clamoring for food and drink. In a very dry time an orchard in grass is much more likely to suffer for want of moisture; and, unless the soil is rich, the grass, competing for food with the tree, may induce starvation. Thus we see that the question is wholly a general one, and has to be governed in a great measure by the circumstances in each case.

In orange growing countries it may be difficult to have grass, but other vegetation may come into the question. At any rate, the general question of clean culture of orange trees must be governed by the same general considerations as influence the decisions in Northern orchards.

The Best Way to Produce Varieties.—Much stress is laid on the practice of hybridizing or crossing in the production of new varieties, but as a general rule our fruit growers have had more success from selection than from crossing. Mr. Rogers' wonderful success in grapes, producing the famous Rogers' Hybrids, is almost exceptional in favor of this plan. Dr. Masters, speaking of the improvement in potatoes, contends that all the best work has been done by selection. In regard to the mooted question of graft hybrids it is well to note that Dr. Masters is a thorough believer in it. He says that very many potato cultivators absolutely denied the possibility of anything like grafting, but he believed it to be a practical and realizable idea. He had himself obtained intermediate forms by the process, and he had seen remarkable results obtained by grafting the potato on to the tomato and other species. In most cases of discussion in these scientific questions the trouble generally about belief is that there is a doubt that the observer has deceived himself. In other words the doubt is whether the observer is competent to observe. No doubt can exist in the case of this famous botanist when he says that he himself has obtained hybrids by grafting as stated. It settles the actual fact of the case in its favor.

Friendly Birds.—Mr. Dudley W. Adams wields his trenchant pen against the West Chester ornithologists who want to save the birds that kill chickens, because they kill mice also. He writes to the *Florida Agriculturist* that on the same argument we should encourage sheep-killing dogs, because they are decidedly useful as scavengers in cleaning up old bones and bread.

Retail Prices of Fruits and Vegetables the First Week in September in Philadelphia.—Lima beans, shelled, 35 cts. a quart; string beans, 15 cts. half peck; egg plants, 5 cts. each; cabbage, 10 cts. a head; celery, 40 cts. a bunch; sweet potatoes, 15 cts. half peck; white potatoes, 15 cts. half peck; tomatoes, 8 cts. quarter peck; green peas, 50 cts. half peck; squashes, three for 5 cts.; cucumbers, three for 5 cts.; pumpkins, 15 cts. each; lettuce, 10 cts. a head; water cress, 5 cts. a bunch; cantaloupes, 10 cts. each; water-melons, 30 cts.; plums, 15 cts. a quart; Concord grapes, 10 cts. a pound; Delaware grapes, 15 cts. a pound; peaches, 30 cts. half peck; Bartlett peaches, 20 cts. half peck.

These are the prices for first class articles—poor material at lower figures.

Preventing Rot in Grapes.—A letter in a daily paper says:

"The experiment of bagging grapes previous to their blooming, is being tried quite extensively this year on C. H. Smith's vineyard at Vineland, New Jersey, and there is every indication that the experiment will prove a success, both as a preventive of rose bug ravages and rot. The clusters on the Smith farm, which were bagged a week previous to the time of blooming, are filling out finely, and it is thought this method will be quite generally adopted next year."

A Large Water-melon.—We do not know the weight of the largest water-melon, but one raised in Delaware this year weighed 51 lbs.

Consumption of Cantaloupes in Philadelphia.—The number of melons consumed in the City of Philadelphia during the season of 1886, is estimated at fifteen millions, yet this is not much spread over a city that stands on one hundred and forty square miles.

The Northern Spy as a Stock for Apple Grafting.—The extreme vigor of the Northern Spy has caused it to become a favorite stock on which to graft apple in New Zealand instead of the indiscriminate seedling stocks as used in our country. The plants are raised from root cuttings just as they are raised for Paradise or Doucain stocks. Of course such plants cannot be sold at the low figures American growers get for apple trees on seedlings.

The Huckleberry.—Some of the Western nurserymen are still pushing the Dwarf Juneberry under the name of "Huckleberry." The Dwarf Juneberry is a very good thing to have in one's garden, so that those who buy it for Huckleberry will not be wholly without value received, but they will be sadly deceived if they think they are getting the Huckleberry. We hardly think it a case of intentional fraud, but it seems ignorance scarcely pardonable.

Kelsey's Japan Plum.—This plum, introduced from Japan without any special name, has been given the name of Kelsey, just as William's Bon Chretien, of the Old World came to be called the Bartlett pear in the New. The Japanese have no native plum that is fit to eat, but they have taken the plum of Europe and improved them in a line quite different from that in which we have worked. This variety is a grand affair. The fruit is about 9 inches in circumference, and delicious. It was first noted in our magazine in 1882, and is receiving marked attention in the South. In Florida especially it seems to be very popular.

Vineyard of Mr. Geo. B. Andrews, Fitchburg, Mass.—This gentleman is a very successful grape grower. He has 3,800 vines, 2,500 of which are Concord, 2,000 of which are in bearing; last year they bore ten and a half tons of grapes. They are 8x6 feet, on galvanized wire trellises. Cow manure answers best. The cost is about $190 per acre, and the expense for repairs and baskets and other trifles, about $50.

Fig Culture in Tubs.—The Fig will thrive in the open air considerably north of the Potomac, if care be taken to bend the branches and cover with earth during the winter. But as tub plants, kept in a barn, cellar, or very cold greenhouse, during winter, they give a pleasurable success.

The Enormous Consumption of Strawberries.—The largest lot of Strawberries ever shipped in one day this year over the Delaware railroad, is said to have been one hundred and ninety-five car loads. It beats the coal trains, only it does not last long. A many little finger gathered those berries, and they gave pleasure to many a little mouth.

The Thurber Peach.—J. C. Wilbur, of Milford, Del., has fifteen peach trees of the variety known as "Thurber," from which he has picked eighty baskets of fruit this year. The trees were set in 1880, and the eighty baskets sold at the Milford depot for $75. This was at the rate of $540 per acre of one crop.

Storing Oranges.—The efforts to keep oranges beyond their usual season, in order to avoid market gluts, are meeting with success in Florida. They have been kept successfully for 120 days after gathering.

Celery in California.—Californians love to tell Eastern folks of their grapes, and figs, and other nice things, which set an Easterner's mouth to watering. But Eastern folks may take comfort in the fact that they can have luxuries they of the West must pine after. For instance, they cannot raise good celery, and without good celery, is life worth living?

Preserving Pears by Cold Storage.—California fruit growers have learned how to keep pears by cold storage without deterioration of flavor. The Easter Beurre seems the favorite for this treatment.

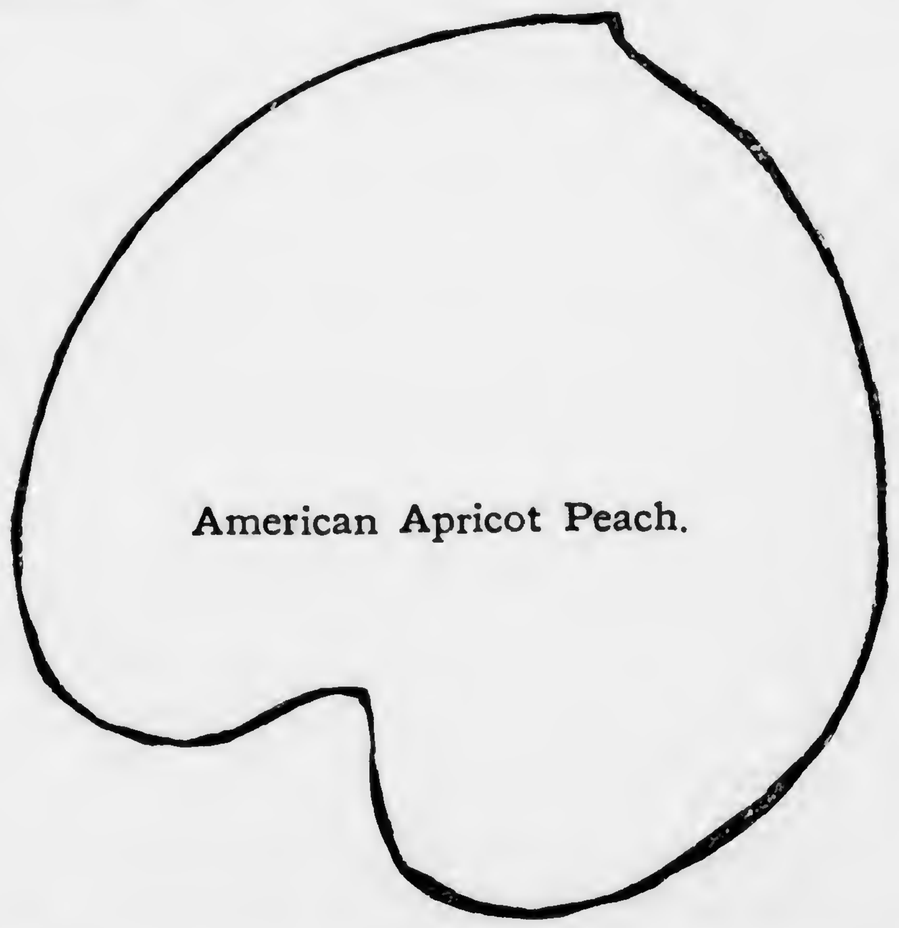
The Crandall Currant.—We have before us cuts, history, and description of this new offering—and, so far as these are concerned, see no difference whatever between it and the "Utah Black Currant" introduced many years ago by a Nebraska nurseryman—and which, distributed by Eastern nurserymen, is now growing as an ornamental bush in many gardens.

Kalamazoo Celery.—Kalamazoo, Mich., can probably challenge the world in the production of celery. In 1886 it had 1,440 acres under celery culture, and it sold for $300,000. This is about $200 an acre. It would be interesting to know the value of the land per acre, and the cost of the celery crop. Hollanders are chiefly employed in the labor.

Globe Artichokes.—These, which are the large heads of a plant not distantly removed from the thistle family, are not used in the east, except perhaps in a few gardens—but they are in general use on the Pacific slope. The plants require a little protection from the frosts of an Eastern winter.

NEW AND RARE FRUITS.

American Apricot Peach.—Mere size is not sought for in a good dessert fruit. One of the smallest of grapes—the Delaware—is one of the most profitable. Among pears, the small Seckel heads the list for popularity, and the Lady Apple brings better prices than any other because it is always welcome as a dessert fruit. We have had nothing of this class among peaches. We have had small peaches to be sure, but they are nearly all stone. Their sole merit has been in extra earliness.



American Apricot Peach.

We have now the pleasure of introducing to our readers a new variety, which we think will take the same rank among peaches that the Lady does among apples. The stone is surprisingly small. We have seen nothing like it in all our experiences with peaches. It would be a great curiosity on this account even had it no other peculiarity. But it so happens that it is of delicious flavor, and it will therefore be welcome to the lover of gastronomic pleasure as well as to the mere hunter of curios. It is medium in size, of a golden apricot color, with rich red shading on the sunny side. The stone is free and the flesh sweet, melting, again reminding one of an apricot. The outline sketch is from a small specimen, the last on the tree of the season. Its time of ripening is with the Muscogee, Stephen's Rare Ripe, Croft's Golden Pine Apple. The Muscogee ripening at Charleston on the 10th of August. The figure of the stone is from one of the larger fruit that matured earlier in the season. It is a chance seedling, originating on the grounds of H. P. Walker, "The Postern," Summerville, South Carolina.

We had thought to call this peach the Lady Peach, on account of the small size and superior quality—so suggestive of that famous apple—but for the assurance of the lady who sends it that this, the last of the crop, was smaller than any that have gone before. The next thought is in connection with the strongly marked apricot flavor. But we have already the "Abricotee," which, however, English and Americans persist in calling Late Admirable. But in that the apricot flavor is scarcely perceptible to many tastes. Downing could only say that "it is thought to have a slight apricot flavor." As the other is a French variety, and there is really no one with a pronounced apricot flavor, we have decided, with the permission of the raiser, to name it the American Apricot Peach.

The Bidwell Peaches.—The several varieties raised by Bidwell, attracting attention in Florida, are said to be peculiar in having skins almost as smooth as nectarines.

The Delaware Winter Apple.—Mr. D. S. Myer, Chairman of the American Pomological Committee for the State of Delaware, says that there must be some mistake about the Delaware winter apple being a new apple, as he can see in no respects any difference between that and the Lawver.

The Noble Strawberry.—The English climate is more favorable to large strawberries than our dryer climate. Mr. Laxton sends us a colored drawing of his new kind, "Noble," which are 2½ inches in diameter. It is one of those that bear in large clusters, and there are four of the large first fruits on the cluster, besides a large number of smaller ones.

SCRAPS AND QUERIES.

"**Curculio in California.**—A correspondent of the Gardeners' Monthly inquires why the curculio has not been introduced into California as well as the colding moth, to which the Editor answers that there is something there unfavorable to its success, without assigning any other reason. It strikes us that the cause of the difference is very obvious in the habits of the two insects. The curculio spreads slowly from orchard to orchard, and there is but once in the year that it can be conveyed in the fruit, and but little in that way, as the infested and spoiled specimens are usually retained at home. It is not carried in boxes, cases and packing. But the codling moth is taken for months in barrels, boxes, and other packages containing fruit, and in the straw and other material used in conveyance; and the insects in cocoons may be thus conveyed thousands of miles without difficulty. Hence the reason that this insect is sent into every quarter of the world."—*Country Gentleman.*

[Our impression at writing was that the insect had been detected there—but that some unexplained cause prevented its increase.—Ed. G. M.]

A Destructive Insect on Apple Trees.—"G. P." Norwich, Conn., says: "I inclose a leaf or two from a crab-apple tree; you see the edge of the leaf is rotted, and cemented down; I find eggs of some kind enclosed; I find no worms on the tree, but nearly all the leaves thus rolled, and being thus covered I am at a loss how to get at the eggs, to kill them, and fear a crop of worms will be developed. How shall I fight this pest? What is it, only on this one tree?"

[What our correspondent takes for eggs, are the excrements of an insect that has wholly disappeared. It is a leaf-roller, but there are numbers in this class, and there is nothing to determine which particular one has done this work. For want of this knowledge, there is no way to help our friend.—Ed. G. M.]

Madeleine Pear.—Rev. E. P. Powell, Clinton, N. Y., writes: "I was compelled to discard Madeleine as being incomparably the worst fire-blight subject among my pears. Onondaga is bad enough but I can fight it out on that line. Belle Lucrative is also inclined that way and occasionally a tree will go. Clapp's Favorite is with me one of the subjects. Those include my unreliables."

FORESTRY.

COMMUNICATIONS.

THE USES OF OUR IMPORTED TIMBER.

BY W. C. BUTLER.

There is no imported wood more popular than Mahogany, Swietenia Mahogani. Its rich rose color, with its light and dark shades, when polished, produces a beautiful effect; and its even grain makes it easy to work. It is a native of the mountainous parts of Cuba, and is extensively imported into Europe and this country, for the manufacture of furniture and interior finishing. Mahogany and other rare valuable woods in large quantities have been dug up from muck beds at Pensacola, Florida, and authorities say that these woods are fully 5,000 years old, and are still in such good condition that they can be used in the arts.

Coccoloba, a costly wood, is a native of South America, and is imported for the manufacture of mathematical instruments, tool handles, furniture, etc., of the finest quality. When polished it is a very brilliant yellow, with dark brown veining. Being poisonous, it is dangerous to work, and in cutlery factories where it was manufactured into handles, its use has been discontinued on this account.

Ebony, Diospyros, is a native of Africa; there are several species imported, the best of which is D. ebenus, it is very expensive, but is reported by travelers as growing in such abundance in some parts of Africa that the natives use it for fire wood. We cannot but wish that Stanley could induce Tippoo Tib to give up his inhuman slave trade, and devote himself to exporting the valuable products of his country. The whole genus to which Ebony belongs is remarkable for the hardness and dark color of its wood; it is used for fine furniture and ornaments.

Amaranth is a costly wood, imported from South America for furniture, mathematical instruments, handles for cutlery, etc. When worked its color is brown, resembling walnut, but when exposed to the sun it turns to a rich carmine color.

Lignum vitæ, Guaiacum officinale, is a native of

San Domingo. It is so hard and heavy that it cannot be used to any great extent for mechanical purposes, but is used for ornaments, toys, etc.

The Teak tree, Tectonia grandis of India, the most valuable wood grown in the East, is a timber tree of great size, the wood is very durable. It is neither too heavy nor too hard, it does not warp or split when exposed to dampness or heat, and contains an essential oil which prevents its rotting under wet conditions, and at the same time acts as a preservative to iron and repels destructive insects; it is somewhat of the nature of Mahogany, and takes an excellent polish. In England Teak is compressed and answers some of the same purposes for which box-wood is now used; it is used in the United States for furniture.

Willow for baskets to the amount of $500,000 is yearly imported into this country; the home supply is very large, but it does not cope with the demand.

A wood which is used for furniture and interior decoration is the Mahaleb Cherry, which grows in Central Europe. It has a fine tint of color and an agreeable perfume.

The best boxwood is found in the countries bordering the Black Sea. Immense quantities have annually been sent to England, and several thousand tons of the finest quality from Southern Russia annually pass through Constantinople for England and America. It is used for wood-engravings, tools, skate-tops, shuttle-blocks, etc. When the skating rinks collapsed recently, 150 tons of Turkey boxwood bound for America for skate-tops was stopped in London. This wood is now becoming scarce.

Satinwood, Chloroxylon swietenia, is a native of the West Indies and is imported for furniture and interior decoration. It has a white, lively color.

Most of the French Walnut sold in our markets really comes from the Orient. The finest quality is sold for $5.00 per pound. It is too expensive to be used, only as veneer.

A complete history of Rosewood was published in the September GARDENERS' MONTHLY, 1886. It is a native of Brazil and is extensively used for fine furniture and interior finishing in the United States. It is of an oily nature, is very hard and and durable, has a rich brown color.

3904 Melon Street, Philadelphia.

EDITORIAL NOTES.

THE ENGLISH OAK.—This grows to a large size in the British Isles. An old trunk was taken out of the bed of the river Dee at Aberdeen in Scotland, recently, that was twenty-nine feet round. The piece was thirty feet in length.

CERASUS SEROTINA.—Few trees are better known than the wild cherry. As a timber tree, it ought to have a preeminent place, for it is of great value in furniture, and is not far behind mahogany in the beauty of its appearance. For fire-wood it has few equals—and then there is that virtue so dear to the American heart, that it grows fast. We do not know of any serious disease that troubles it—and of no insect that makes it a special object of attack. The allied species, P. Virginiana, the dwarfer choke cherry, is subject to the black knot, but we have never known that this species has it.

We give with this, an illustration of a weeping variety that we think will be as popular as the Kilmarnock Weeping Willow. Though a seedling of a native American species, it made its appearance in Germany, and has been from there introduced into our country. We give the illustration in this department, as part of the history of a very valuable timber tree, though of course the variety will be in demand solely as an ornament to grounds as the willow is.

Cerasus serotina pendula.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

EFFECT OF SEED FROM DIFFERENT PORTIONS OF THE PLANT.

BY JOHN LANE.

In answering the inquiry, page 279 September number GARDENERS' MONTHLY. My early life was full of experimenting, improving and patenting in manufacturing agricultural implements; and when a few years since I retired to growing flowers, for fun, I naturally wanted to excel and have the best.

It is often my custom to save two selections of seed, planting of both separately. In Asters, its most marked result,—two years ago I selected and set apart my best Aster plants for seed and saved the seed from six flowers only around and avoiding the central flower—the next year my Asters were better in being more uniform in size with larger flowers—when again I set apart my best plants and first selected seed from the six flowers as before, and then made a second selection by gathering the seed from the remaining flowers on the plant, and last March planted of both lots of seed and gave like treatment during the summer. August 10th my Asters were blooming nicely; August 16th, 17th and 18th, I was induced and pleased to exhibit them at the Annual Meeting of American Florists, as a superior flower, (see page 36, September number *American Florist*)—and see the Aster-bed to-day September 2d. The firsts remain uncut, a mass of flowers now the fourth week in bloom, scarcely a flower turning old, their centers full double as at first, uniformly very large and beautiful; the plants also have improved in habit, are uniform in height with increased numbers of flowers, a very marked improvement over last year. All these flowers are being saved for seed.

The seconds, have proved inferior in both plants and flowers, the plants varying in height and numbers of bloom, with all sorts of flowers from very poor to good, small to large. These flowers have been cut as being unworthy for seed.

I have the Aster Comet under treatment. Such a beautiful flower needs a better habit, of which more anon next year.

4801 Lake Avenue, Chicago, Ill.

VITALITY OF SEEDS.

BY J. M.

In the August number of the MONTHLY, referring to the question of the vitality of seeds, you refer to my experience with the Martynia. I can now add one year more to the record, by sending you with this a Martynia plant pulled from my garden to-day. It is seven years this month since the garden was filled up from the old garden previously referred to, and not a plant has been allowed to seed in all that time. The garden is kept hoed continually, and Martynias are cut out with other weeds. The plant sent you is the only one that has appeared this season. How deep down these seeds may be I cannot say. The garden was filled in some 4 to 6 feet, but it is not often that it is now disturbed to any greater depth than 2 feet, which it sometimes is for Lima bean poles. From the regularity with which more or less plants have appeared every year since the filling, I think it more than likely that the end has not yet been reached.

Germantown, Pa.

SOME IMPORTANT DISCOVERIES IN THE LIFE-HISTORY OF THE HOP PLANT-LOUSE (PHORODON HUMULI, SCHRANK).

BY C. V. RILEY, M. A., PH. D.

The author has been for several years carrying on investigations with a view of ascertaining the full annual life-history of Phorodon humuli, and especially with a view of settling the hitherto mooted question as to its winter life. The importance of the inquiry, from both the economic and scientific sides, is self-evident. The hop crop, in all parts of Europe where it is grown, and especially in England, annually suffers more or less from the ravages of this, its worst insect enemy, and in some years is a total failure. The same is true in North America, at least east of the Rocky Mountains, and last year the injuries of this Phorodon in the hop growing regions of the State of New York were so great that many hop yards were abandoned and have since been plowed up; while but ten per cent. of an average crop was harvested. From the purely scientific side, entomologists, notwithstanding the great interest attaching to the subject, have been divided in opinion as to the identity of specific relationship of the Hop Phorodon and one that occurs on Prunus, while the full annual cycle of the insect's life has remained a mystery. After full and satisfactory investigations Prof. Riley has satisfied himself that, contrary to the prevailing impressions among hop-growers and previous investigators, the Hop Plant-louse does not hibernate under ground on the roots of the hop, nor in, on or about anything in the hop yard; but that, upon the advent of the first severe frosts, the hop plants and the hop yards are entirely cleared of the species in any form. He finds that all statements to the contrary in this country are based on misapprehension or mistaken identity of species, and expresses the belief (though admitting the possibility of variation in this respect in milder climates) that the same will be found to hold true in England, where hibernation on the hop root has been accepted by high authority. The positive statements made about eggs being laid in autumn, whether on roots or upon the vines left in cutting or which are carted away, are based on conjecture, and have been blindly copied without credit by one writer from another—a practice too common among second-hand writers on economic entomology.

The conjectures of some of the best students of Aphidology that Phorodon humuli had a form (mahaleb, Tonsc.) living on Prunus and that there was a consequent migration from one plant to the other, have been positively proved to be correct by direct colonizing from Prunus to Humulus and by continuous rearing from the original stem-mother hatched from the winter egg.

The observations have been made on growing plants and in vivaria at Washington and checked by others made simultaneously at hop yards at Richfield Springs. An incident is recorded as illustrating the effect of meteorological extremes upon Aphides. The extreme heat and dryness of July 17th and 18th killed every one of the insects under observation at Washington, entirely clearing the plants. The economic bearing of such exceptional phenomena is discussed, as also of the biologic observations made. The more important conclusions of the author from his studies so far made are summed up as follows:

1. Phorodon humuli hibernates in the winter egg state, which is fastened to the twigs of different varieties and species of Prunus, both wild and cultivated. The egg is difficult to detect, because it is covered with particles which resemble the bark in color and appearance.

2. The annual life-cycle is begun upon Prunus by the stem-mother which hatches from this winter egg.

3. Three parthenogenetic generations are produced upon Prunus, the third becoming winged and instinctively abandoning the Plum and migrating to Humulus. The habit of moving from plant to plant after giving birth to an individual, and thus scattering the germs of infection, is well marked in this winged generation.

4. During the development of the three plum-feeding generations the hop is always free, and subsequently, until the return migration, the Plum becomes more or less fully free from infection by this species.

5. A number of parthenogenetic wingless generations are produced on the hop (seven or the tenth from the stem-mother on Plum having been traced up to August 5th), and finally there is a return migration of winged females to the Plum in autumn.

6. Exact observations are not yet complete as to the full number of generations produced upon the Hop before the winged return migrat appears, and another month's careful watching and experiment is needed to fill this hiatus in the annual cycle as also to ascertain the exact number of generations produced in autumn on the Plum. From knowledge extant and previous general observation, the fact will probably prove to be as follows:

7. The tenth or eleventh generation will produce winged females, about the middle of August, which will deposit their young upon the Plum, and these will become the only sexed individuals of the year, the male winged and the female wingless, the latter after coition, consigning a few impregnated or winter eggs to the twigs.

8. At the date of writing (August 5th) the first females on Hop are still alive and breeding, having existed two months. There is, consequently, an increasing admixture of generations from the first on Hop until frost overtakes the species in all conditions and sweeps from the face of the earth all individuals alike, perpetuating in the egg state those only which reached the sexual condition on the Plum.

9. Each parthenogenetic female is capable of producing, on an average, one hundred young (the stem-mother probably being more prolific) at the rate of one to six, or an average of three per day, under favorable conditions. Each generation begins to breed about the eighth day after birth, so that the issue from a single individual easily runs up, in the course of the summer, to trillions. The number of leaves (700 hills, each with two poles and two vines) to an acre will not much exceed a million, so that the issue from a single stem-mother may blight hundreds of acres.

10. While meteorological conditions may materially affect the increase and power for injury of the species, these are far more truly predetermined and influenced by its natural enemies, many of which have been studied and will be described.

11. The slight colorational differences, as also the structural differences, including the variation in the cornides on head and basal joints of antennæ, whether on Plum or Hop, are peculiarities of brood, and have no specific importance whatever.

12. The exact knowledge gained simplified the protection of the hop plant from Phorodon attack. Preventive measures should consist in destroying the insect on Plum in early spring, where the cultivation of this fruit is desired, and the extermination of the wild trees in the woods wherever the hop interest is paramount. Also in avoiding the introduction of the pest into new hop countries in the egg state upon Plum cuttings or scions Direct treatment is simplified by the fact that the careful grower is independent of slovenly neighbors, infection from one hop yard to another not taking place. Experiments still under way have shown that there are many effective remedies, and that the ordinary kerosene emulsion diluted with twenty-five parts of water and sprayed with the cyclone nozzle, or a soap made by boiling one pound of pure potash in three pints of fish oil and three gallons of water, and this dissolved in eight gallons of water, and sprayed in the same way, are thoroughly effectual remedies, and leave the plant uninjured. The former costs seventy-five cents, the latter thirty cents per acre, plus the time of two men for three hours, plus appliances. The object of further experimentation now being carried on is to simplify and reduce the cost of these last to a minimum.

(Abstract of a paper read before the Society for the Promotion of Agricultural Science.)

[It is a well-understood general law that animal life increases in proportion to the amount of food at its command. Insects fond of one plant will rarely leave that plant for another, but thrive and increase on the abundance. But there is room for suspecting that the tastes of living creatures have considerable elasticity, and we should not be surprised if an insect bred to a Plum would not experiment on and take to another kind when the Plum was abolished. But on this we would prefer the views of Prof. Riley or other experienced entomologists.—Ed. G. M.]

EDITORIAL NOTES.

SORGHUM SUGAR.—Miss Helen Abbott, the eminent authority on plant chemistry, in a lecture given before the Franklin Institute of Philadelphia, contends that the failure so far to produce sugar profitably from sorghum, merely imposes new duties on plant chemists, who will inevitably find out how to make it pay, if they persevere. She points out the very successful culture of the beet in France had to go through just the same ordeal. Chemical investigation, aided by the policy of protection to this infant industry, that was established over it by the Napoleonic Government, finally evolved it to complete success, till now it is one of the staple industries of the French nation.

FERTILITY OF HYBRIDS.—In August, 1884, *The Independent* had an exhaustive article showing that hybrids were as generally fertile as species or varieties that may have originated in what some people would call a more natural way. It is not that some hybrids are not sterile, for the fact is well known that they are; but these "regular" species and varieties have degrees of sterility among them quite equal to anything known among hybrids. The point is that sterility is not the special attribute of hybridity that it is so often supposed to be. The facts, however, in any case are always welcome.—*Independent.*

STORMS AND ATMOSPHERIC CURRENTS.—No class of the community is more interested in the study of the attendant phenomena of storms and air currents than the gardening world. The articles in *Scribner's Monthly* from the pen of such an enthusiastic student of the subject as Professor Shaler, will be welcome reading.

FORMATION OF CELLS.—The protoplasm or material out of which cells are formed, can, according to the experiments of Mr. Gardener, pass from cell to cell, through minute apertures in the cell-wall. It is regarded as a very important discovery in connection with vegetable physiology.

WHY BIRDS SING.—In *Scribner's Magazine* for September, "The Motif of Bird Song" is an out-of-doors paper by Maurice Thompson, in which he sets forth some fruits of his close observation of the songs of our American birds, as to their quality, melody, etc. He arrives at the conclusion that bird-song is the instinctive expression of pleasure, and that the absence of true rhythm in it is probably significant of the want of power to appreciate genuine music.

HAY FEVER.—It has now been proved incontestably that pollen has nothing whatever to do with hay fever—but comes from minute organisms germinating in the atmosphere, and which might readily be mistaken for pollen by microscopists with an imperfect knowledge of the lower forms in the vegetable kingdom.

THE AGENCY OF INSECTS IN THE INTRODUCTION OF NEW SPECIES OF PLANTS.—The belief that plants of one species or genus become new species or genera in order to accommodate themselves to certain insects for which they may be said to have special preferences, seems to have become so general with intelligent botanists, and so firmly incorporated with their intellectual life, that we continually meet with its expression in botanical essays. The proposition is not put quite in that way. As generally expressed it is that plants become specialized to suit the special insect visitors with a view to cross-fertilization by these special guests and no others. Flowers become long-tubed, for instance, in order that they might be served only by long-tongued insects; still facts continually arise which puzzle the admirers of the ingenious speculation. A beautiful cape terrestrial orchid, Disa grandiflora is fully equipped for a specialized fertilization by insect visitants, but no insect is now known to frequent it. Hence it never perfects seeds. The author of the essay believes that after having changed its character to favor its special insect, the special insect became extinct. This catastrophe, the author suggests, must have happened long ago, even as geologic time is reckoned. Now its increase is by small tubers which it pushes out like potatoes from the main stem. The author supposes the plant "adopted" in "self-defense" this method of increase when it found itself deserted by its insect friend. The inconsistencies of these speculations, with the supposed advantages of cross-fertilization, do not seem to be perceived. It is first assumed that plants that breed "in and in" have a poor chance for existence during long geologic ages; so a plant that self-fertilizes itself becomes another species or genus in order to obtain cross-fertilization, finds itself mistaken, and then changes to another species in which it again has to have "in and in" breeding of the closest kind by tubers, and in this close breeding condition manages to hold itself on "through long geologic ages," apparently as well as if it had continued the cross-fertilization by the aid of its insect friend. Just how such views of development commend themselves to the minds of the many acute botanists who have adopted them, seems a mystery to the laity.—*Independent.*

THE FROST LINE.—Speaking of the probable success of pine-apple culture in Florida, the *Dispatch* says:

"There is no such thing as the 'frost line,' or the line of 'hurtful frosts;' all frosts are hurtful, but the degree of hurt depends upon the severity of the frost. It is probable that no part of our national domain is absolutely exempt from frost, but for all practicable purposes that part of Florida lying south of a line from Cape Romano to Jupiter Inlet may be regarded as strictly tropical.

"At periods more or less remote from each other a polar wave of such extreme severity sweeps over the country that its icy breath reaches the southern limits of our State, but woe to the rest of mankind when the real South Florida gets a frost. How remote these periods have been or may be no one can tell. One interval only has fallen within the memory of man, and that was fifty one years ago.

"But absolute exemption from frost is not necessary to successful pine-apple culture. South of 28° on the Atlantic coast and 27° on the Gulf coast I believe a pine-apple crop is in no more danger from frost than the corn crop of Ohio or the wheat crop of West Virginia and East Tennessee."

POISONOUS PLANTS AND FLOWERS.—It would really seem that the old saw that what is one man's meat is another man's poison, has a much wider application than is generally supposed. Once in a while we see the most innocent plants reported poisonous. Now it is the Magnolia flower. Some one in the Old World has discovered that the grateful odor of this beautiful flower is poisonous. It is nonsense.

A LUSCIOUS WILD PLUM, PRUNUS OCCIDENTALIS.—Mr. W. G. Lyon tells the *Botanical Gazette* that on Catalina Island, off the coast of California, Prunus occidentalis makes a beautiful tree as large as an orange, and that the plum is large and luscious. Our California friends should endeavor to introduce such a desirable wild fruit to cultivation.

THE WORLD'S RAINFALL.—In a recent paper to the Royal Society of Edinburgh John Murray sought to give the world's rainfall in figures. The areas of country having an inland drainage—equal to 11,486,350 square miles—receive 2,243 cubic miles of rain yearly. The total areas draining directly to the ocean equal to 44,211,000 square miles, of which 38,829,750 square miles have more than ten inches of annual rainfall, and discharge into the sea 6,569 cubic miles of water each year. By this means rather more than 5 000,000,000 tons of solids are carried to the ocean annually.

SCRAPS AND QUERIES.

VITAL POWERS OF OLD AND NEW SEEDS.—A correspondent from Belvidere, N. J., says: "You are always so exasperatingly correct in all you say or write that it does one good to be able, if only for the short time that elapses before you sit down on one, to catch you napping. You write as a comment on the first item in "Scraps and Queries" in September MONTHLY that "we did not know before that when older seed did grow it took longer to sprout," and add, "We take this as evidence of low vital power," etc. Now, why may you not just as well take it as evidence that the integument of the seed in question had become so hardened by age that a longer time was required for the moisture necessary to germination to penetrate it? Were you to take a canna seed before perfectly ripe, when it had hardly vital power enough to grow at all, I fancy it would sprout in much less time than a seed fully matured and full of vitality. Indeed, is it not a fact that all seeds sprout more quickly when slightly immature?

"I take it for granted that the vital power in all living organisms increases until the period of full maturity."

[Is it correct that the integument of a two or three year old seed is harder—that is, less impervious to moisture—than one that has been carefully dried and is only a year old?—Ed. G. M.]

POTATOES ON BEANS.—"F. N." says: "I clip the following from a Florida paper. Can you tell me if it can be done? I have always understood a plant must be of the same family to insure a successful graft:

"'A potato growing on a butter bean vine is the latest vegetable curiosity brought to this office. The potato weighs two ounces, and grew two feet from the ground on the bean vine, and eighteen inches from a potato plant. It was found in the garden of Mr. Robert White.'"

To our mind the potato may be a gall formed by some insect.

As for grafts, it is generally believed that plants must be closely related before they will grow together. But a number of very different genera will sometimes graft together. We believe that so eminent a physiologist as Dr. Masters concedes that the potato may be grafted on the tomato, and a great number of genera in the olive family will graft on the privet. We all know that the pear will graft on the quince and on the hawthorn. We do not think a potato would grown on a bean vine; but we should have given the same answer if some one had asked us if a pear would grow on the hawthorn before it was known that it would.

ECHINOCYSTIS LOBATA.—"T. B. S." says: "I take the liberty to send you some flowers of a Cucurbitaceous plant for name, if you please. I have tried Loudon's edition of 1855, with his two supplements, having no higher authority, and cannot find it. You will see it is diœcious, and very similar to the Sycio Vine, but much finer, being thickly covered with blossoms, and bears fruit similar to the West Indian gherkin, about the same size and covered with spines. It is a great climber—just discovered it this morning on a neighbor's arbor. On inquiry I found the seed came from the South, and was found among some rice. The pod is not eatable; bears four large seeds similar to pumpkin or squash.

"For immediate effect in covering arbors I think it will be found an acquisition and far superior to the Sycio Vine."

It is, as our correspondent remarks, a very interesting vine, and well worthy of attention. It grows wild over all the Atlantic States from Canada to Texas.

SERVICE BERRIES.—"What are Service berries?" asked the young lady. The sergeant replied: "They are berries we get in the service; but we called them bullets then." The horticulturist could scarce give a better answer, for who ever saw a Service berry? The Editor has years threescore and more, and has often seen the Service berry tree; but the Service berries before him are the first fresh berries he has ever known. And they are not berries, but little pears—smaller than any ordinary pears, but still to all appearance little pears. The leaves of the tree are just like those of the Mountain Ash, but instead of the usual red berries, the tree bears these little pears. It is next brother to the Mountain Ash, and is Sorbus domestica, the Mountain Ash being Sorbus aucuparia. The tree seldom bears till the tree becomes quite old, and hence the fruit is so rarely seen. These have been kindly sent to us through Mr. Chas. H. Miller by Mr. Peter Kiefer, whose name is familiar as the raiser of the Kiefer Pear.

It may be as well to say to the reader that the sergeant was confounding a mere name when he thought of the military service in connection with these. Dr. Bromfield observes: "The name Service, applied to the tree and its fruit, is, I suspect, derived from (the Latin) Cervisia, a liquor prepared from grain by the ancient Gauls, and analogous to our beer, of which beverage a kind has been brewed, time out of mind from the berries of some tree of the present genus, called Sorbus by the ancients, 'quod ejus succum sorbere solent.' The Welsh prepare a similar drink at this day from the fruit of the Mountain Ash, called Sorbus sylvestris by many of the oldest writers on plants."

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

IMPORTATION OF PLANTS INTO GERMANY.

BY PROF. C. V. RILEY.

The Commissioner of Agriculture recently received official notification through the Department of State of a reversal of Section 2 of the German Imperial decree of July 4, 1883, which prohibited not only the importation of grape-vines, roots and cuttings into Germany, but also, by this section, prohibited the importation of all other plants from countries not represented at the Berne Phylloxera Congress. This is virtually a victory for Professor Riley, U. S. Entomologist, and his services in this line will be appreciated by our gardeners and fruit-growers.

In the latter part of 1883 Messrs. Roelker & Sons of New York complaining to the Department of State of this exclusion of American plants. the Hon. A. A. Sargent, then U. S. Minister to Berlin, was directed to investigate the matter. Considerable correspondence was had and at the request of the Secretary of State, Prof. Riley gave the following expert testimony as to the absolute impossibility of the introduction of Phylloxera upon plants other than grape-vines, which was published in the report of the entomologist, for 1884 (Ann. Rept. Dept. Agr., 1884, p. 107), and which is here reproduced.

BUREAU OF ENTOMOLOGY, WASHINGTON, Feb. 9, 1884.

Sir: I beg to submit the following report on the communication of Hon. A. A. Sargent, Minister to Berlin, to the honorable the Secretary of State which you have referred to me:

Certain American exporters of grape-vines (Messrs. Roelker & Sons, of New York), have complained to the Department of State concerning the exclusion of American plants from Germany, and Mr. Sargent reports upon the state of the German laws in reference to such importations.

It seems that Germany, by the imperial decree of July 4, 1883, prohibits absolutely the importation of grape-vines, cuttings and roots. The importation of grapes and husks and of all other plants is allowed only to nations which took part in the Berne Congress of 1881, and then only under certain restrictions as to packing, certificates from official experts, &c. Thus Germany has gone a step beyond the provisions of the Berne Congress, and the stringency of the decree has caused great excitement and indignation among nurserymen in this country.

While no one can appreciate the necessity of stringent measures against the introduction of the Phylloxera into non-infested countries more than I do, yet certain of the provisions of this last decree appear to me utterly useless, and, without doubt, they cause much loss and annoyance to nurserymen in this and other countries as well as to those of Germany, without producing any corresponding benefit.

The clause in the decree prohibiting the importation of all "nurslings, shrubs and other garden products not belonging to the category of the grape-vine, coming from nurseries and hot-houses into the Empire," is based upon the possibility of the winged females settling upon such plants and depositing the few eggs which give birth to the true males and females which produce the winter egg. I will repeat here, therefore, the conclusions which I have repeatedly urged in discussing restrictive legislation in reference to the Phylloxera, and which the habits and life-history of the insect justify.

The eggs from the winged female are most often laid in or on the ground near the base of the vine,

and they are so delicate as to require especially favorable conditions of temperature and moisture to enable them to hatch. They must, in my judgment, infallibly perish when deposited on anything else than the lower surface of the living grape-leaf where they can receive moisture by endosmosis, or in crevices in earth that is kept moderately moist by rain or dew. But even supposing that these eggs could hatch, and the resulting female should lay her impregnated egg on any other living plant than grape, and that this egg should give birth in due time to the stem-mother, she would inevitably perish without issue for want of suitable food. With the utmost care to supply the natural conditions, I have failed nine times out of ten to obtain even the sexual individuals, and it is much more difficult to get the impregnated egg. European observers have had the same experience. From this it follows that the introduction of the Phylloxera upon any other plant than the grape-vine, at any season of the year, is impossible, and hence the folly of the prohibition.

As to the possibility of its introduction upon grape-vines themselves, however, there can be no doubt. The insects can be carried on the roots of vines in the winter either in the dormant larva state or in the "winter-egg" state, and in this latter state it may occur upon almost any part of the plant above ground, more particularly under the loose bark of the two-year-old canes, although recent observations have proven that whenever it occurs above ground it is produced rather from the gall-inhabiting type than from the dangerous root form. Therefore the clause which prohibits the introduction of cuttings with or without roots into districts where the Phylloxera absolutely does not exist, is fully justified by the facts. It may be well to state, however, that in districts where the Phylloxera exists no better preventive can be adopted than the introduction of the hardy and resisting American vines as stocks upon which to graft the more susceptible European varieties.

It should also be urged in this connection that while the decree is justified in so far as to prohibit the actual introduction of vines and cuttings, there can be no danger from the mere passage through a non-infested country of such vines. These are necessarily boxed, and can only be properly and safely shipped during the cold or non-growing season when the egg is dormant; so that there is a practicable impossibility in the introduction of the insect by such a passage.

While I am rather in the dark as to the nature of the original complaint (as no copy accompanied the papers received from the State Department), the United States can safely and with great justice urge upon Germany the reversal of that portion of the decree which does not apply to grape-vines proper. Respectfully,

C. V. RILEY, Entomologist.

HON. GEORGE B. LORING,
Commissioner of Agriculture.

Minister Sargent on this testimony entered a protest against the operation of the section in question on the part of the United States Government, desiring that the restriction be removed and that the plants of American exporters be admitted into the Empire under the same terms with those of the States which were represented at the Convention of Berne.

Here the matter rested until January of the present year, when the Commissioner of Agriculture requested of the Department of State, on behalf of the Division of Entomology, information as to the action of the German Government upon Mr. Sargent's protest. The Secretary of State immediately called the attention of Minister Pendleton to the matter and the latter has succeeded in securing the suspension of the obnoxious section of the decree.

The exact wording of the new decree, which forms Imperial Law-bulletin No. 13, is (translated) as follows:

"(No. 1712.) Decree concerning the importation of plants with roots, from the States which did not take part in the International Phylloxera Convention, April 7, 1887.

"We, William by the grace of God, German Emperor, King of Prussia, etc., decree in the name of the Empire, with the consent of the Bundesrath, the following:

"I. The importation of plants with roots not belonging to the category of grapes, which come from the States which did not take part in the International Phylloxera Convention of the 3d November, 1881 (Imperial Law-bulletin of 1882, page 125), over the border of that territory, which is composed of the German customs domain, and the Imperial possessions lying beyond the German customs limits, is permitted under the following conditions:

"1. The importations must be exclusively through the places of entrance designated by the Imperial Chancellor according to 4, section 1, of the decree of July 4, 1883 (Imperial Law-bulletin, page 153).

"2. The plants must be securely packed, but in such wise that a close examination can be made of the plants as well as of the packing.

"3. The importation can only be made when an investigation, made at the place of entrance, at the cost of the importer, removes the suspicion of Phylloxera. In the foregoing circumstances the provisions of the 6 of the decree of July 4, 1883, apply.

"II. The Imperial Chancellor will take the necessary measures to carry into effect the foregoing regulations, particularly the appointment of experts, who are to be entrusted with the execution of the investigations mentioned in 1, Section 3, and the regulation of the cost of the investigation.

"III. The instruction in section 2 of the decree of July 4, 1883 (Imperial Law-bulletin, page 153), is revoked.

Witness our hand and Imperial Seal.

Given, Berlin, April 7, 1887.

WILHELM
von BOETTICHER.

EDITORIAL NOTES.

A JUNE MORNING IN THE WEST INDIES.—

Up from the Caribbean
The wind comes like a pæan,
As on my fragrant orange-bough I swing,
Dreaming and wondering,
And piping Sapphic fragments o'er and o'er.
Along the shore
The surf foams madly and the breakers roar.
Strange odors from afar,
Spice, amber, nard and tar,
And Lesbian roses blown in Mitylene,
And violet-breath, and waft of myrtle green,
Steep me in visions passionate and wild,
Of love, all undefiled,
Whereby was Sappho's bright
Rose-garden of delight,
Flooded with starry splendors of old night!
O! Bower of June,
With morning freshness lingering after noon!
All round through apple boughs the cool air blows,
Shaking soft slumber down the dusky leaves,
Where still the subtle violet-weaver weaves!

—From a song of the Mocking Bird, by Maurice Thompson in Independent.

THE AMERICAN GARDEN PLOT AT THE LONDON EXHIBITION.—The London papers speak in high praise of the exhibition of American plants in the recent exhibit. One bed was wholly devoted to California annuals, which thrive so admirably in the London climate. The success of this horticultural feature must have been very gratifying to Mr. Burnett Landreth, the American commissioner, whose tastes flow so much towards gardening. The garden was arranged chiefly by chief gardener William Goldring, under instructions from the Director General Whiteley.

THE MUD-GARDENS AND FIELDS OF THE NILE.—In a little time, then, a Nile farm becomes a rare beauty-spot, instead of a waste of mud; for now the crops are grown. The lentils bend with their heavy load, and the fields of grain turn their well-filled heads from side to side that the ripening sun may change their green freshness into gold. What landscape, unadorned by art, can be more lovely than such a farm, narrow though its limits may be, with its grove of palms to fan the breeze and scatter their sweet fruitage into the lap of the happy fellahin? Here no weeds grow to annoy him. No stone-crops are belched to the surface each year to stop the plough. And this is good, for the Egyptian plough has no scientifically curved coulter or subsoil attachment. When the crops are ripened the irrigation must rest awhile, for all hands are pressed to help with the ingathering.—*From "The Modern Nile," by Edward L. Wilson, in Scribner's Magazine for September.*

THE HOME of SAPPHO.—Lord Byron wrote:

"The Isles of Greece! The Isles of Greece!
Where burning Sappho loved and sung,
Where grew the arts of war and peace;
Where Delos rose, and Phœbus sprung!
Eternal summer gilds them yet,
But all, except their sun, is set."

Just what kind of a home Sappho had, may be imagined from the following description by Mr. Symonds, of the Island of Lesbos on which she lived:

"Exquisite gardens in which the rose and hyacinth spread perfume; river-beds ablaze with the oleander and wild pomegranate; olive-groves and fountains, where the cyclamen and violet flowered with feathery maiden hair; pine-shadowed coves, where they might bathe in the calm of a tideless sea; fruits such as only the southern sea and the sea-wind can mature; marble cliffs, starred with jonquil and anemone in spring, aromatic with myrtle and lentisk and samphire and wild rosemary through all the months."

Evidently there is something left yet in the "Isles of Greece" besides the setting sun, that Lord Byron did not see.

PEACH CULTURE IN AMERICA.—We do not know where the record of the earliest attempts at peach culture in America may be found; but Oldmixon, writing in 1700, says that the whole of the road leading out of Philadelphia and through Germantown, and what is now Germantown avenue, Philadelphia, was one complete string of peach trees.

GARDENERS FROM THE OLD WORLD.—The following advice from a letter in regard to gardeners going to Australia is good for those who come to America:

"I would advise any one coming out here not to go into business at once, had he ever so much

money. Let him take a situation, get acclimated, study the climate, its effects on flowers, plants and vegetables. Mark well the ways of the colonial people, take time to consider over things, and read all the newspapers, which he will find even in an up-country station far more plentifully than he will in a village at home. When he has made up his mind to start business he will then be able to select a suitable locality."

INTRODUCTION OF THE POTATO INTO FRANCE.—At a meeting to celebrate the introduction of the potato into Europe M. Henri L. de Vilmorin, of Paris, read a paper on "The Introduction of the Potato into France." M. Vilmorin said that the potato was first introduced into the Dauphiny from Switzerland. At first it was not extensively grown, and was used as fodder for cattle, and there existed a strong prejudice against it. But a bouquet of its flowers being presented to the king, who greatly admired them, the prejudice was gradually overcome, and the potato became more generally known. In 1830 the Agricultural Society of Paris sent to him a large collection of known varieties which were grown and compared, and resulted in their reduction to 120 distinct kinds. Since then some 2,000 named varieties had passed through their hands, and they had reduced these by about 550 distinct sorts.

ANALYTICAL HERBARIUMS.—Herbariums, or collections of dried plants, usually serve little more purpose than to identify a species, and even then one can often not be sure, because the specimens are imperfect in some respect. They seldom serve the purpose of teaching botany.

Mr. Buysman, of Middleburg, Holland, has conceived the happy idea of getting up herbariums in which all the leading parts of the plant shall be so displayed that in many cases the full characters of a whole natural order might be taught by them.

WAFER ASH.—One of the worst features of common names is one that has not been hitherto noted, namely, that people are no more satisfied with them than botanical names, and new ones come up every year or two. They will not stay named, as with botanical names they usually do. Ptelea seemed too hard, so it came to be called hop tree, the fruit making a good substitute for hops. We read recently in a western horticultural paper about the Wafer Ash. After considerable trouble we found this to be a new name given to the Ptelea. Soon there will be another name "all Greek" to the hearer as well as Ptelea. Now, this is not all a joke, for Ptelea is the Greek name for the elm tree. The seed is like an elm seed; and if people want a new name still, it may come to be elm ash.

SHORT NAMES FOR VARIETIES.—A correspondent of the *Garden* compliments "especially Americans" for the short names they give their new varieties of roses. The compliment might be extended by including the shortening of the old, as well as naming the new. Few persons here ever say General Jacqueminot. Jack is all this good old rose receives.

THE DIVINE PEAR.—This is the name the English are substituting for persimmon. It may be a translation of the Greek name, but persimmon is good enough for common people.

THE WONDERFUL GROWTH OF FLORIDA.—Hon. Wm. D. Kelley, the father as he is called, of the United States House of Representatives, by reason of his long term of service there, has written a letter on the future of Florida, that is exciting more than usual attention. In 1875 Florida was comparatively unknown. There was but 500 miles of railroad, and but one or two good hotels—now there are hotels everywhere, and 2000 miles of railroad. The winter visitors do much of the prosperity, leaving about $7,500,000 each year in the State, and oranges do about most of the rest.

In a recent note on Florida vegetable growing, commenting on a statement that it took all one's receipts to get the product to market in Philadelphia or New York, we suggested that the effort should be to build up Philadelphias and New Yorks around them, and save the transportation expenses. Judge Kelley reaches just the same conclusion. He says Florida has done great things on oranges and on the crop of visitors—but it is capable of much greater things by encouraging other industries. He sees in Florida just the chance for sugar, tobacco, rice and silk—and the feeding and clothing of the thousands whom these industries would support, would bring in an immense amount of cash to the fruit and vegetable raisers, who would thus in a great measure not be dependent on northern markets for the bulk of their products.

Judge Kelley's letter we notice is attracting unusual attention.

AGRICULTURE AND HORTICULTURE OF ITALY.—Mr. Charles Joly ex-President of the National Horticultural Society of France, describes his visit to the great exhibition at Florence, which he styles the Ghent of Italy in its floral features. He says Italy has not the rivers, the coal, and the other advantages which give strength to manufacturing industry in the North—but it is far in the advance in its attention to agriculture, horticulture and the sciences which aid and protect them. She established at Pisa in 1544 the first Botanic Garden, as well as having in the long time past given us Pliny, Virgil, Columella and Palladius. Among modern distinguished agricultural savants she gives us Beccari, Tozzetti, Cantoni, Todaro and Terraciani. She has six schools for teaching grape culture, a school for olive culture, twenty-three schools of agriculture, and twenty botanic gardens. The orange and the mulberry are the most precious resources—while the vine is almost providential in its influence on the existence of Italian civilization. Legunes enter largely into the agricultural art.

Greenhouses of the Late Alex. Mitchell, of Milwaukee.—We regret to learn that there is little probability of these beautiful greenhouses being maintained for any length of time. For the present a florist of the city will overlook things. Mr. Pollard, who has been gardener there for twenty years, retires.

The Secretary of the Iowa Horticultural Society.—Gustavus B. Brackett is the Secretary of the Iowa Horticultural Society, not George B. Brackett, who is a brother, and of Kansas.

C. M. Hovey.—After the extended notice we gave of the life and services of Mr. Hovey in the December number of last year, we have only to express here what must be the universal feeling of regret with which all lovers of horticulture will receive the news of his death, which occurred on the second of September, 1887, in his 77th year, closing one of the most useful lives that has ever been spent in the field of American horticulture.

Charles Dimmick.—Mr. Dimmick, of Ryde, Isle of Wight, England, an occasional correspondent of the Gardeners' Monthly from that far-away portion of our horticultural domain, died on the 1st of September in his 70th year. Among the most recent of his contributions to our pages was an excellent paper on the potato fungus, in which he gave good reasons for maintaining that the old practice of keeping the tubers in a warm cellar, "sprouting" them continually during winter, and then planting these weakened sets, opened the way by their weakened vital power for the terrible ravages of the fungus, which in 1845 seemed to start in the Isle of Wight, and swept finally the whole British Isles.

The career of Mr. Dimmick shows that even in the much-abused, over-crowded old world it is just as possible for honest determination to "get along" as it is in the new world or anywhere.

It is over half a century ago, when Ryde was little more than a village, though it did possess a "Theatre" and a "Town Hall," and when it was universally conceded that cold water was "poison" and beer a "necessary of life," that a "teetotal" advocate visited the town, and held a meeting in the theatre aforesaid. At that time barrooms were about the only educational institutions. Here the young (comparatively) and the old used to congregate at eve, and, amid the smoke from two or three feet length of clay pipe and the essence of malt, go over the village news, and discuss the state of the country, and the exact number of "frog-eating Frenchmen" that any one Englishman could "whip."

In all these "educational" circles there was always one whose talents for debate led the others involuntarily to regard as a leader. This leader proposed one evening, in the midst of the important discussions, that they should all go down to the theatre, and have some fun over "that teetotal fellow." It was a remarkable ending. "Just for fun" the whole gang went on the stage and signed the pledge. The "leader" was a gardener. He had a wife and one child. Going home, to the surprise of his young wife, earlier than usual, and telling of the "fun" that he had had, she implored him to make it in earnest, and she succeeded. The next day he went around to all his acquaintances, a large number, ranging from 15 years old to 25, and persuaded them to enter on the course with him. It was a strange subject of conversation with the old folks about there. A lot of young fellows trying to live without beer! Nearly a month had gone by, when it was found that the greater number had grown earnest; and the "leader" represented that it was no use to have negative qualities—that it would be a good thing to co-operate for mutual instruction in intellectual studies. That little band was ambitious. Geometry, the natural sciences, as well as English grammar, languages, even Greek was taken up, and out of it grew an "institute" in which, each following his own chosen studies, helped the others in those in which his own proficiency qualified him to teach.

A large majority of these young men were gardeners or the sons of gardeners. Sad to relate, the leader of this little band, after six or eight years of wonderful usefulness, relapsed into his early drinking habits—drinking as if to make up for lost time, to great excess, and, stupidly drunk, fell into a ditch, where he was found dead in the morning. His six years of wonderful usefulness will surely overcome any light figures on the other side when the eternal settlement of his accounts is made. Of that band of young men numbers scattered over the world reached positions of eminent usefulness.

Young Dimmick was one of them. At that time he was a young gardener in his first place, among the oldest of the set; but he set down nobly to the task of self-education, and his progress was very rapid. The doctrine of pecuniary success in life, which Micawber subsequently preached, but never practiced, these young men discovered and put into successful use. "If you have 20 shillings, and spend 19 shillings—pleasure; if you spend 21 shillings—misery." It was among the earliest of their beliefs that the most useful anti poverty doctrine that could be preached was, never to spend the last penny earned. In a few years Mr. Dimmick had, almost imperceptibly, saved a small sum. With this he bought out a very small grocery store on a leading street; tea, coffee and cheese being about the only things sold. Then he added a stand in which he sold a few pot flowers. He next added a few garden seeds. Following came a small greenhouse at the back of the store, or, as they would say, his "shop." By this time the grocery was abandoned, and his whole efforts bestowed on the business he loved best. It is enough here to say that as a seedsman and florist he became one of the best known in the British Isles.

Like so many men in the horticultural line, here as well as in the old world, he generously devoted much of his time to public affairs. As early as 1851 he was elected one of the Board of Commissioners. When Ryde grew to be a borough he was elected a member of the Town Council, and was continuously re-elected till declining years demanded rest. He gave 44 years to public service, outside of his business as a florist. Few people will know, unless they read this notice, how much of interest they derive from a visit to that wonderfully beautiful town of Ryde—how much of that interest is due to the early efforts and unceasing thought and influence of Mr. Dimmick in bringing it about.

We give this extended notice of one of whom so few of our readers have seen or heard of, except perhaps as an advertiser in English horticultural journals, because we love to show what members of the gardening fraternity can do when they set their minds to do; and because possibly the pleasure which we believe the readers of our magazine derive from its perusal may in a remote degree be due to the acquaintance and friendship which, as a boy studying gardening, the Editor had with his dead friend, some few years older than he was himself.

He was buried in Brading, in the same churchyard where rests "The Dairyman's Daughter," also in her line an example which has profited many a young person to the uttermost ends of the earth.

Garret R. Garretson.—This famous seedsman died at his home in Flushing, Long Island, New York, on the 28th of August, in his 74th year.

He may be said to be one of the great fathers of the modern seed trade. Possibly the Shaker community was earlier in starting the method of selling garden seeds on commission in country stores, but if so, the Shakers must have been soon followed by Garretson, who established these agencies all over the land.

Willliam and Grant Thorburn kept stores together; William in the grocery, and Grant seeds. Garretson was employed in the grocery with William, but fancying the seeds better, went over to Grant. He was born at Blackwell's Mills, Somerset Co., New Jersey. Subsequently he became foreman in the establishment of W. R. Prince till 1836, when he commenced to grow seeds on his own account. His wife was a Miss Bloodgood, a niece, we believe, of James Bloodgood, the nurseryman who introduced the famous Bloodgood Pear. Only last year they celebrated their golden wedding.

Of a rather modest disposition, he continued to the last opposed to showy advertising bills and picture cuts on his seed bags. The result was that the competition of Rochester, Detroit and Philadelphia became so severe that he had to withdraw from the commission seed business he had inaugurated and finally gave it up altogether for the business of a market gardener. While in the seed business he paid especial attention to the improvement of the cabbage, and the writer of this notice well remembers when Garretson's Flat Dutch was deemed all that any good gardener needed. This variety had an enormous run, especially in the Southern States. When he gave up seeds and took to vegetable growing the cabbage was one of his staple crops, and his farm on the Jamaica Road was more like a fair ground with its hundreds of men and wagons coming and going with the crops in the cabbage season. We believe of late years Mr. G. has not taken an active interest in the labor of this work, the management being under his son Alonzo.

Mr. Garretson was not a demonstrative man, but was fond of quiet study and experimenting. If it cannot be said of him that he died leaving many thousands of dollars, there is a satisfaction in knowing that he experienced little of the disquieting vicissitudes which the terrible struggle for mere wealth so often brings, and that his life. so far as the outer world knows, was one of continuous pleasure and enjoyment.

BOURNE'S ESSAY ON ROSES.—This excellent essay on old and new roses, read last year before the Massachusetts Horticultural Society, has been translated into several foreign languages. It appears in full in the *Journal des Roses* for April.

LINDENIA.—Another volume, the third, of this grand work on orchids has been commenced, of which part the first part is now before us. Aerides Fieldingia," one of the most beautiful of all orchids, having a compact raceme 16 inches long, with possibly fifty deep rosy pink flowers, occupies the first plate. The next is Dendrobium purpureum, var. candidulum. This is that remarkable rarity, a double orchid. The flowers look more like large, intensely double, white carnations than an ordinary orchid—and besides the attractions it will present to the orchid lover, ought to be very desirable for cut-flower work. Odontoglossum cuspidatum occupies another plate. This has very narrow sepals, petals and labellum, which are spotted orange and brown. There are ten of these large flowers on the raceme. The fourth plate is Anguloa uniflora, one of the section of Dove orchids. The ivory white flowers are some 3 inches long.

With these lovely plates are full descriptions, botanical history, and practical details for culture, that must make the work very desirable to all orchid growers—while as a beautiful work of art, those who have never seen an orchid will welcome it to their library tables. It is now published by J. Linden, aided by Lucien Linden and Emile Rodigas, at Ghent, for sixty francs a volume of 12 parts.

CATALOGUES.—Anderson, H. S., Foreign Nursery Stock, Union Springs, N. Y.; Bull, Wm., Bulbs and Tuberous Plants, London, England; Dreer, H. A., Bulb List, Philadelphia, Pa; Hartland, Wm. Baylor, Daffodils, Cowslips, &c., Cork, Ireland; Henderson, Peter, & Co., Bulbs, Plants, Seeds, New York City; Hubbard, T. S., & Co., Grape Vines, Small Fruits, Fredonia, N. Y.; King, James, Trade List Bulbs, Chicago, Ill.; Meehan, Thomas, & Son, Wholesale Trade List, Germantown, Phila.; Pynaert, Van Geert, Ed., Chrysanthemums, Ghent, Belgium; Sachs, David, Novelties, Quedlinburg, Germany; Wilson, Wm. C., Plants, Fall, Astoria, Long Island, N. Y.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

NEW YORK HORTICULTURAL SOCIETY.—The fall exhibition will take place on Nov. 8th.

The articles on the schedule, for which competition is invited, include Chrysanthemums, Orchids, Ferns and foliage plants, cut flowers with Chrysanthemum excluded, cut Roses and the usual run of designs.

FLORIDA HORTICULTURAL SOCIETY.—The Florida Nurserymen's Association has merged into a new body with the above title. A. I. Bidwell is president, and S. L. Taber secretary. The next meeting will be held at Ocala.

AMERICAN POMOLOGICAL SOCIETY.—As we go to press we learn that the meeting of the Society in Boston is going on very successfully, and promises to be one of the most interesting ever held. It was, however, a great disappointment to learn at the last moment that Mr. Patrick Barry could not attend. The next biennial meeting is to be held in Florida.

STATE BOARD OF FORESTRY OF CALIFORNIA.—At a recent meeting it was

Resolved, That the State Board of Forestry, through its representative at the next National Forestry Congress, will impress upon that body the importance of urging upon the National and State Governments the great necessity for withdrawing Government timber lands and State school timber lands from entry and sale, and the establishment of a system for sale of timber alone under provisions insuring the protection of young growth and the renewal of the forests as fast as cut.

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.
DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

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FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

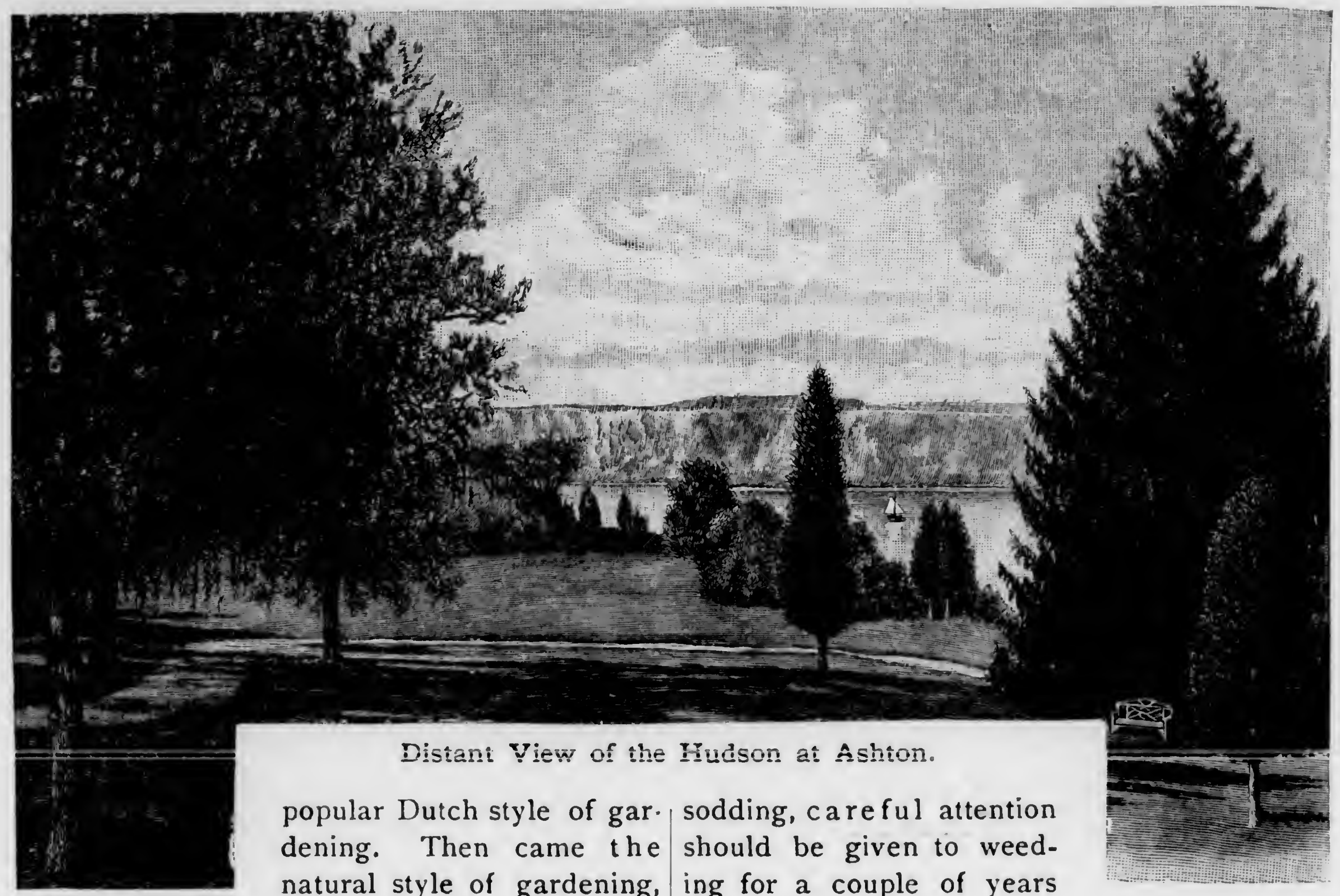
There is no time in the whole year but thought on the proper laying out of grounds is timely. The Seasonable Hints we have recently been giving seem so thoroughly appreciated that we are disposed to continue them awhile longer. We are very glad that they are aiding in the development of taste in this direction, for one of the highest pleasures of gardening comes as much from the proper arrangement of grounds as from the beauty of the flowers or from the individual trees with which they are ornamented or by which they are adorned.

Avenue at Ashton.

We desire to-day to emphasize a point made in our last—that in the planting of a place, too much thought cannot be bestowed on the future views which the trees may either enhance in beauty, or obstruct or depreciate if improperly arranged. The very same view may be made to look wholly different from the same property by a judicious arrangement of groups of trees.

In our last we gave a distant view of the opposite shore of the Hudson river. To-day we give another view of the same opposite shore, but yet, how varied! True, it is not from the same grounds. The view we now give is from the property of Mr. Schieffelin, but the variation would have been all the same if it had been from the same place, for it is chiefly the different styles of planting that produce the varied effects.

Again, one of the most pleasurable features of gardening is the great contrasts that may be obtained from various methods of planting trees. At one time every thing was planted in straight lines. This was a leading element in the once



Distant View of the Hudson at Ashton.

popular Dutch style of gardening. Then came the natural style of gardening, in which straight lines of planting were nearly abolished. But there are many happy effects from occasional straight avenues. They are justified often by their own inherent good taste. And often they are justified by the happy contrast with other scenes. On Mr. Schieffelin's grounds this is very well illustrated. There is a broad avenue with a line of trees, and even those who have had little culture in the theoretical principles of beauty must feel that such a lovely natural scene as the one given of the Hudson river is very much enhanced by a previous drive up the avenue.

We continue to receive many complaints about the weedy and unsatisfactory nature of many lawns. The best method of getting a good lawn is to sod it with carefully selected blue grass sods, or sods of any other thick-set grass that can be had, and then to pay attention to weeding out any obtrusive plant that may want to compete for mastery. Often the grass of this solid character cannot be had, or the expense not justified. In this case we must sow seeds. Then it is wise to choose those kinds that grow naturally thick and stocky, so that they may crowd out any competitors. For this part of the world there is nothing equal to what is known as Green Grass, or, as it is called elsewhere, Kentucky Blue Grass. But when a lawn is to be made by sowing instead of sodding, careful attention should be given to weeding for a couple of years or so. Much of the complaint about bad weeds and bad grasses in lawns comes from neglect of early weeding.

COMMUNICATIONS.

HYACINTHS.

BY MR. POLMAN MOOY.

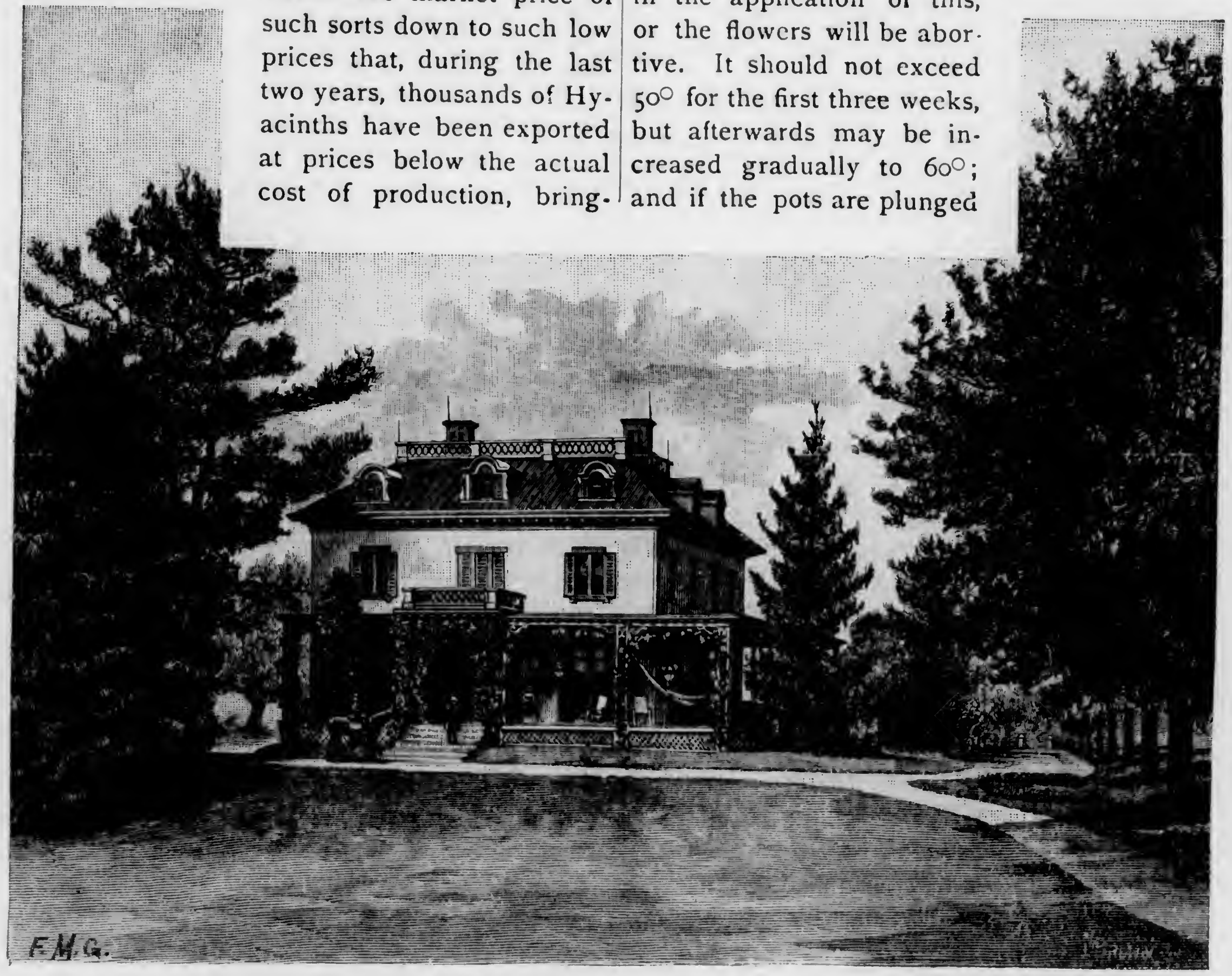
II.

All the varieties have been obtained from seed selected from thousands of seedlings and by artificial crossing and impregnations, which is an occupation of very long duration, as a little bulb grown from seed requires six or seven years before it is of sufficient size to produce a good flower; and when considering that this bulb if found worthy to be grown on requires twelve to fifteen or twenty years' careful artificial propagation before a moderate stock can be had, it may not create astonishment when many times new varieties have realized large sums of money. New varieties in almost every shade of color have been saved from year to year, showing improvements in size of spike, in size of bulb, size of bells, etc.; but it may be worth remarking that in all the different colors we have obtained improvement in size of bells, with the exception of the bright

scarlet-colored sorts, which until now have always turned out with small, narrow bells. If we could obtain a Hyacinth flower of a bright scarlet color like Queen of the Hyacinths or Garibaldi, with bells as large as La Grandesse or Cloche Magnifique, what a splendid improvement it would be, and probably in the course of time we may obtain this treasure.

Between the time when double Hyacinths were most esteemed and the time when single varieties came into favor, a period of perhaps ten years, the always increasing demand was greater than the general stock could furnish, and consequently the prices of Hyacinths grew higher every year, and it was at that time to be a rather profitable culture. This induced a great number of farmers in the neighborhood of Haarlem to try growing Hyacinths, which many have done with more or less success. At that time land was worth only half the price that it is at present, and the most easy-growing Hyacinths were then artificially propagated to such a large extent that the stock overgrew the demand, and during the last three years forced the market price of such sorts down to such low prices that, during the last two years, thousands of Hyacinths have been exported at prices below the actual cost of production, bringing great losses to the growers of this beautiful flower, while it overstocked the markets in several foreign countries where these bulbs were most used, to which poor circumstances the general depression in trade has of course contributed.

Respecting the use made of Hyacinths, I may say that the greater portion of the bulbs are being forced, and for this purpose the bulbs should be potted about the middle or end of September in 5-inch pots in rich light soil, and placed in a cold frame or under a wall, where they can be covered with wooden shutters or some similar contrivance to keep off heavy rains. In either case they should be covered a foot thick with newly fallen leaves, and being once well watered after potting, they may be left for months to form their roots, when the most forward should be brought out (some repot into somewhat larger pots according to the apparent strength), and the bulbs should be placed in a gentle heat as near the glass and light as possible to prevent the flower stems rising to an unnatural height. Some care is necessary in the application of this, or the flowers will be abortive. It should not exceed 50° for the first three weeks, but afterwards may be increased gradually to 60°; and if the pots are plunged



Ashton; the residence of H. Maunsell Shieffelin, Yonkers, N. Y.

Distant View of the Hudson at Ashton.

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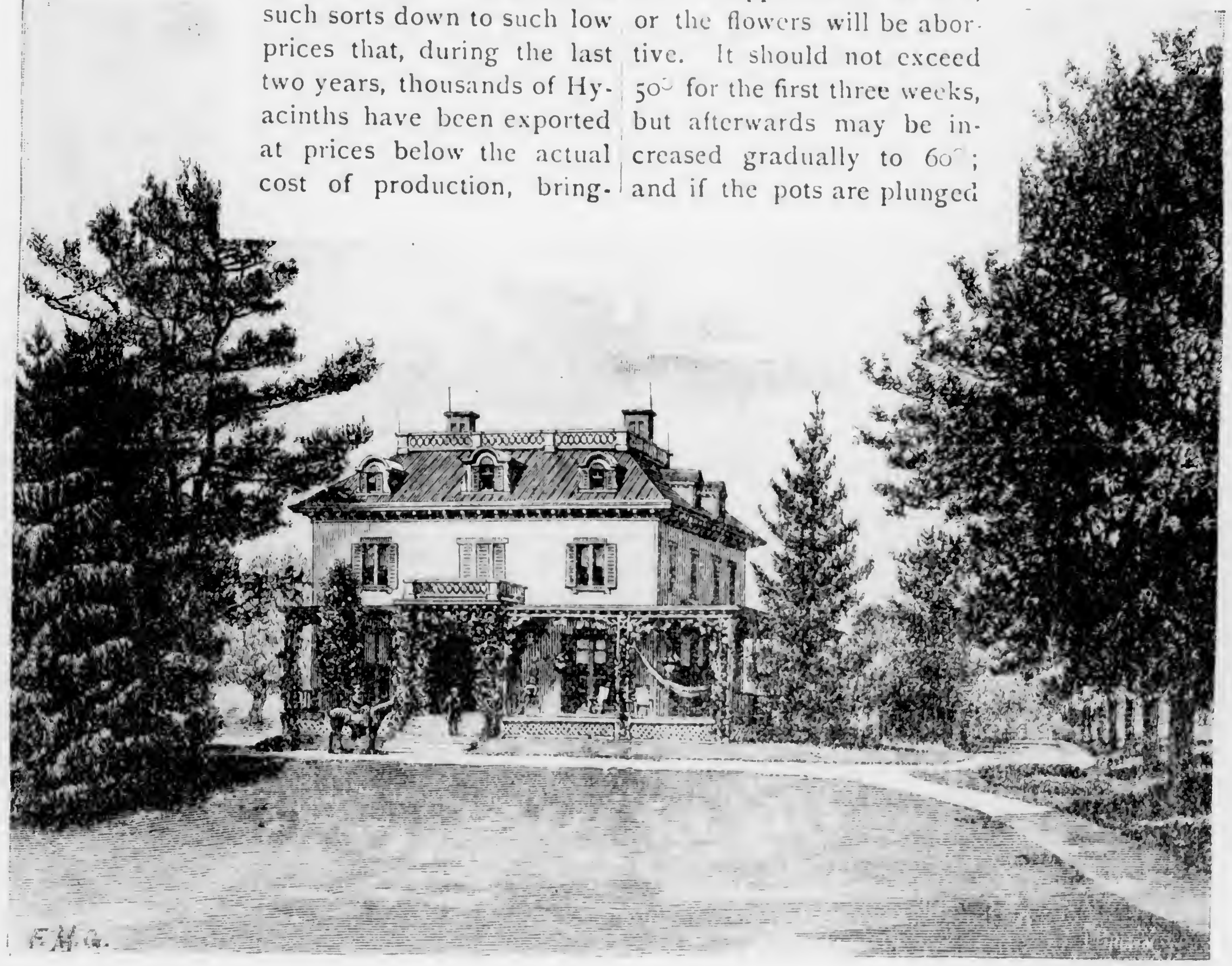

Ashton; the residence of H. Maunsell Shieffelin, Yonkers, N. Y.

INTENTIONAL SECOND EXPOSURE

in bottom heat the same care should be observed, or the points of the roots will certainly be killed. One-third the depth of the pot is fully sufficient at first, and if the heat is brisk they should not be plunged more than a few inches at any time.

When the flower stems have risen to nearly their full height, and the lower bells of the spike are beginning to expand, the plants should be removed to a lower temperature usually afforded by the greenhouse, and when the bells are fairly expanded the plants can be taken to the sitting room or wherever their presence is desired, observing to protect them from sudden changes or cold draughts of air, and the water given to them should be moderately warm.

Instead of the usual practice of drying Hyacinths at once in the sun, I would rather recommend the method adopted in this country—namely, to place them side by side on a sunny piece of ground, and cover them with about an inch of loose earth to thoroughly ripen the bulbs by the subdued heat imparted to the earth which surrounds them. Left in this position for a fortnight they will become dry and firm, and an hour or two's sunshine will finish them properly for storing.

The propagation of Hyacinths can be artificially performed in two ways: (1) By the bulbs being cut crosswise and sprinkled with sand to absorb any superfluous moisture that may exude from the incisions. After a time they are planted in the earth in the usual way, when the mother bulb divides itself into small bulbs. (2) By scooping out the base of the large bulbs after they have been taken out in July. After this operation it requires great attention in watching carefully the process of properly drying the wounded bulbs, because not properly attending to this the whole bulb may become mouldy and be lost completely. The bulbs thus treated are planted in October, at which time the small offsets at the base of the bulb are partly visible already, and are then planted in the usual way, only with a slight covering of earth in a warm situation as much exposed to the heat of the sun as possible, where the small bulbs gradually develop in the warm sandy soil, with the proper degree of moisture, aided by the climate, which about Haarlem appears to be very suitable to the growth and development of this flower. (3) In this natural way by offsets from the parent bulb, which is, however, rather slow to meet the present large demand.

The Tulips used for forcing require about similar treatment as the Hyacinths. When placed in heat they should be placed as near to the glass as possible, in order to prevent the flowers drawing up too high, and the flower stems should occasionally be assisted when, by their quick growth, they get entangled in the foliage. During recent years Tulips have become great favorites for planting out in beds, for which thousands are annually employed, making by their very brilliant colors a very showy effect indeed. I could dwell for a considerable time upon the history of the Tulip and the very unusual speculation, or rather gambling, at some past period these have been made subject to; but if my present paper has given some little pleasure, it may induce me to try another on these and other sorts of flower roots at some future occasion.

I have no doubt that in several ways my present paper may be found wanting, but I may be allowed to remind you that as a foreigner I write in a language altogether strange to me. As an ardent admirer of horticulture in every branch, and stimulated by the earnest desire to do something to oblige the members of the Club, who may all be considered as lovers of horticulture and botany in every branch, I have ventured to write this short paper.

WHAT IS GOOD PLANTING?

BY D. O. MUNSON.

"B.," of Baltimore, Md., in September number of your valuable magazine writes: "I have a puzzle which I would be glad if you would unravel for me." I will try to unravel it. The trouble with most tree planters is, they overdo the work; they think they must go to the chip pile for chip dirt, the woods for woods earth or the stable for strong manure to put in the holes, which is all wrong. The tree should be planted with the surface soil taken from the holes. The manures spoken of above might be added afterwards as a mulch and would then do no harm. I sent this spring fifteen evergreens to one of my neighbors. As soon as he received them he sent for an experienced English gardener to plant them. As soon as he saw them he said they must be planted in woods earth. After a day or two spent in gathering the earth the trees were carefully planted and the result was that more than one half of them died. About the same time I sent two men from the nurseries to plant three evergreen hedges, one of them contained 75 American Arbor-Vitæ, another 100 Am. Arbor-Vitæ and the third 240 Norway Spruce; the Arbor-Vitæ were 5 to 6 feet, the Norway Spruce from 3 to 5 feet, planted in sod land 2½ feet apart. My men simply dug holes sufficiently large to take in the roots, pulverized the soil well so it would settle all around the roots leaving no vacant spaces in the holes. Of the Arbor-Vitæ every plant lived and not over two per cent. of the Norway Spruce died.

Another mistake about tree planting is the advice often given in catalogues and elsewhere to prune the roots. This would do no harm if judgment was used, but inexperienced root trimming is usually death to the tree. We have had men come to the nurseries and while their orders were being filled take out their knives and begin cutting away roots very recklessly, and when asked asked why they did this their reply would be that they had seen it advised in catalogues that all bruised and broken roots should be cut off. Consequently no matter how small the bruise or how big the root, off it came, and by the time they got through more than half of the roots would be cut away. My experience is that a bruised or broken root will heal over much sooner below the surface than it will above. Several years ago in ploughing near a peach orchard many roots were broken off, some of them 1½ inches in diameter. Several months later in ploughing the same ground we ploughed one furrow nearer the trees and the same roots were cut again, and I was surprised to find the roots broken by the first ploughing all healed and that they had thrown out hundreds of small roots. Showing conclusively it is not necessary to cut roots smooth in order to have them heal. I have filled orders out of the trenches where I have had trees trenched out for sale and have had parties write me their trees all died, when I knew they had been received by them in the very best condition, while the cullings in these same trenches all lived; and when I inquired of the parties how they planted them, the reply generally was that they had used the utmost care and put chip dirt or some other drying manure in the holes—of course they died.

Falls Church, Va., September 28, 1887.

THE WEEPING MULBERRY.

BY J. C. TEAS.

In the August number are some notes on our new Weeping Mulberry, in which it is stated that the fruit is above the average size of Russian Mulberries. This is an error. The trees have not yet borne enough for us to judge of its value as a fruit tree. The berries so far were small, but may become larger, as it is said that the fruit of the Russian Mulberry usually increases in size as the trees attain age.

The great merit of this tree lies in its graceful weeping habit, entirely unlike anything heretofore introduced, and its being at the same time a remarkably vigorous and healthy grower; with a hardiness that withstands the severe cold of the far North, and the still more destructive heat and drouth of the South and South-west; flourishing where the Kilmarnock and other popular weeping trees entirely fail.

We first noticed this tree and budded from it in 1883, instead of '85, as stated. The original tree, always healthy and thrifty, is less than three feet high, spreading out on the ground.

Carthage, Mo., Sept. 20, 1887.

ROSE, ETOILE DE LYON, FROM THE OPEN AIR.

BY ANTOINE WINTZER.

I send you by mail to-day a few buds of the Tea Rose, Etoile de Lyon, cut from a lot of plants in open ground. The very heavy rains of the past few days have injured them a little. The plants from which the buds were cut were planted in my garden in June 1886; they were small plants from 2½-inch pots, made a good growth and produced a fine lot of bloom the first season. They were planted in a long bed with Anna de Diesbach. I did not expect they would survive the winter as the location is very exposed. In this connection I should state I had four rows in the bed: the 1st, Genl. Jacqueminot; 2d, Safrano; 3d, Duchess Brabant and Regulus; 4th, Anna Diesbach and Etoile de Lyon. The bed had only a light dressing of coarse manure thrown over the surface late in fall which was all the protection the plants had; the following spring this was raked off. When pruning the plants last March I pulled up all the Tea roses except the Safrano and Etoile de Lyon as they seemed to have survived the winter better than the other varieties of Tea roses. The plants were cut close to the ground and started to grow right along and have given a fine lot of buds and flowers since last June; the Etoile de Lyon plants have given more buds and good flowers than the Safrano; the plants received only ordinary farm culture.

[These flowers were fully equal to the best grown under glass.—Ed. G. M.]

West Grove, Pa.

TRANSPLANTING TREES.

BY M. J. NAGEL.

"B." in Baltimore, would like to have the puzzle unraveled about tree planting. That many times in spring well planted trees are dying is the natural consequence from the effect that trees taken up in fall or spring, being a few days or a week on the road, lose part of their vitality; if such a tree is planted at once in the open ground exposed to sun and wind, the balance of life is evaporating away if the tree is not strong enough to withstand it. I saved many a hundred trees, especially small evergreens, by heeling up, covering with a light cover of sack cloth; in three days or a week and sometimes two weeks, according how the weather would be, the trees had made small roots about half an inch long; then I knew the trees had regained their strength to grow, and I planted on a cloudy day or in the evening, and seldom lost a tree thus planted. I know a nurseryman, had shipped trees under the same conditions as mine, got the trees the same day, planted at once and about seventy-five per cent. of his died. I heeled mine up and about ninety-five per cent. lived. There is no danger from breaking the small roots by a little careful handling of the trees, and if a tree or shrub is planted in this way it is sure of success.

Jefferson City, Mo.

FLOWER GARDEN NOTES ON SEPTEMBER NUMBER.

BY W. F. BASSETT.

Why the Trees did not Live, p. 263.—I would suggest as possible reasons for the difference, a second exposure in taking out after heeling in; and if some days of warm dry weather intervened, it might make considerable difference; and another point may have been in the location; and still another, depth of covering.

The Sweet Pea.—Will not succeed here on account of the hot summers. I have tried them repeatedly and this season in the shade of a building, but as soon as extreme hot weather came they dwindled down and only gave two or three miserable clusters. My son reports them a failure in Monmouth County also.

White Everlasting Pea.—This is no new thing but it is difficult to get, as more than half the seeds from the white variety come red.

Hammonton, N. J.

EDITORIAL NOTES.

THE MAMMOTH SEQUOIA.—Mr. Webster, in the *Garden*, speaks of this tree "dwindling away" in places where they are exposed. In American gardens, exposed or not, it dwindles away from the virulent attack of a fungus, Cercospora Sequoiæ, and we think it quite likely this is the trouble in the old world. Not one tree in a hundred escapes here. Sometimes the tree is wholly killed before it is three years old, and of the many hundreds we have known planted only one exists now.

ENGLISH IVY.—A correspondent of *Vick's Magazine* says this does admirably at Nantucket. It is probably one of the most lovely of all our creeping or climbing plants, and is always appreciated even for its classical associations. It does not like bright warm sun in winter; wherever this can be avoided it is perfectly hardy in any part of the United States.

BEDDING PLANTS.—*The Gardeners' Chronicle* notes that the great fancy for bedding plants, which in England ran wild about a quarter of a century ago, is dying out, chiefly on account of its expensiveness; and left chiefly to parks and public gardens, where the uncultivated tastes of the masses get what the masses are willing to pay for. It says that better effects are obtained by the use of hardy flowers than were ever obtained by geraniums, coleus, and such like plants, that require expensive warmth through winter to bring them on.

IRRUPTION OF NEW ROSES.—Some of the greatest accessions to the lists of roses were made in 1827, when Noisette, of Paris, sent out thirty-five new ones, and Manget, of Orleans, twenty-five. No one would think of sending out that many novelties in a single year now. Surely the world is growing more virtuous with age.

THE SINGLE DAHLIA.—Beautiful as this is, it has not succeeded in dethroning the old double kind, which seems to be more popular than ever.

GLADIOLUS GANDAVENSIS.—There has been no certainty to whom we owe this, the parent of the beautiful gladiolas we all so much admire. A correspondent has traced it to a certainty to Dean Herbert, the famous raiser of Amaryllids. Dr. Herbert never saw his hybrid flower. It was named by Van Houtte, gandavensis, who seems to have been the first to see it flower in that part of the world.

NEW OR RARE PLANTS.

A YELLOW WATER LILY.—A true Yellow Nymphæa, different from N. flava re-discovered by Mrs. Treat in Florida, has been raised by chance in a French florist's establishment. It is called the Canary-flowered water lily.

HYBRID STREPTOCARPUS.—Old gardeners will remember a plant of the gesneraceous order called Streptocarpus Rhexi, which never had but one large leaf, the flowers from the base of this leaf ending in a curiously twisted long seed vessel. Mr. Watson, employed in the Kew Gardens, has produced a race between this and S. parviflora, and the numerous hybrids seem destined to great popularity. For the benefit of those who still cling to the exploded notion that hybrids are usually sterile, it may be well to note that these hybrids are very fertile.

We are sorry to note that the authorities of Kew allow these garden forms to go out under Latin names.

JONESIA ASOCA.—Among some of the genera allied to the Cassia section of Leguminosæ, Amherstia nobilis, and Poinciana, are amongst the most rare and beautiful. But *Revue Horticole* says that Jonesia Asoca rivals these. The flowers are in globular compact bunches of a deep orange at the base, the stamens forming tufts of violet purple. A delightful perfume is given off from these brilliant bouquets of flowers. It is a native of the East Indies, and might be made to thrive in some of our milder sections. If not already in America it would be worth introducing for trial.

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SCRAPS AND QUERIES.

FALL GRASS.—"Subscriber," Baltimore, Md., writes: "I enclose sample of grass which comes up on all very sunny and exposed places on the lawn from July till killed by frost in the fall. Please answer in the MONTHLY the cause."

[In this part of the world this is known as "Fall Grass." It has probably other names in other localities. Botanically it is Panicum sanguinale. It is one of the greatest enemies to a good lawn, as it destroys every kind of vegetation, taking the ground wholly to itself. This would be no consequence, rather an advantage, if it were perennial; but, being an annual, there is a bare place in the spring, and no grass until mid-summer. The only way to get rid of it is to prevent it from seeding; but this is by no means easy, as the seeds are often produced down in among the leaves where they can scarcely be seen. It flourishes best where the soil is damp and rich. In dry soils the Fescue and Blue grasses will hold their own and stubbornly refuse to be crowded out. It may help some to sow these grasses on the bare spots left by the Fall grass in the spring.—ED. G. M.]

GOOD DAHLIAS.—"Bryn Mawr" asks, "May an old subscriber ask the favor of Mr. Editor to give him, either in the November or December number of the MONTHLY, in the order of merit, the names of twelve of the best large flowering Dahlias; also the same number of the small flowering or Liliputian kind?"

[There are so many good ones we cannot undertake to give the best, or even place them in order of preference; but the following would make a good selection. If our correspondents can improve on it we should be glad.

It is pleasant to note that these beautiful autumn glories are increasing in popularity:

LARGE FLOWERING.

Puritan,
John Kirby,
Earl of Radnor,
Defiance,
Maid of Essex,
Bird of Passage,
Chang,
Alonzo,
Incomparable,
Mrs. Strawbridge,
Hercules,
Mary Keynes.

SMALL FLOWERING.

Una,
Gold Pheasant,
Capt. Nemo,
Panorama,
Dr. Webb,
William Buchner,
Liliput Gem,
Theo. Heymann,
Ida Fisher,
Little Arthur,
Pearl d' Or,
Venus.

NEW FRENCH ROSES.—Our correspondent, Mr. Jean Sisley, writes that a large number of new roses have been raised at Lyons last year, some of which may prove of permanent value. Of these he believes to be among the best the following, raised by Bernaix: Duchesse d' Anerstadt, Viviand Morel, Souvenir de Madame Métral, all teas; and Hybrid Teas, Madame Carle, Pernet Fils; the following Teas—Madame Joseph Godier, and Hybrid Tea, Germaine Caillot, and a dwarf perpetual Polyantha, George Pernet.

Dubreuil sends out a good forcing kind called Princesse de Sagan.

The Duchesse is yellow, with a darker centre. Vivian is a free blooming dark rose. Mrs. Godier is a new shade of yellowish rose and pretty. The Princess is also unique in its shade of bright crimson. Souvenir is a cherry red, and will make a good climber. Madame Carle is a vivid crimson. Germaine, pink with a yellowish centre.

Bernaix also sends out a hybrid perpetual, Souvenir de Madame Faure, a bright light crimson, slightly shaded purple, and which has a remarkably pleasant odor.

Sulphur on Vegetation.—"H. M. H.," Watertown, N. Y., writes: "I would be pleased to have your opinion of the probable effect of the gas from burning sulphur, considerable in amount, on the foliage of apple trees. We have an apple tree, a 'Duchess,' standing where the gas from a brick-kiln strikes it four rods away, and we notice that after each burning the leaves become spotted with brown and drop off. We are inclined to lay the cause to the gas, but can find no record of experiments in this direction."

[When sulphur is burned in a greenhouse it destroys foliage. The leaves turn black and drop. Animal life would also be destroyed under these circumstances. In the open air the sulphur would be so diluted that it would probably not be destructive. If animals could stand it we think plants could.

The description of the injured leaves seems more like the work of fungus than of sulphur.—Ed. G. M.]

Fine Verbenas.—Mr. D. K. Herr, Lancaster, Pa., sends samples of a large number of seedling verbenas, that are particularly large and fine. They were planted three by eight, filling a long three feet wide border.

The verbena has been singularly successful in most places this year, showing no trace so far as we have seen of the disease that so disheartened cultivators a few years ago.

It is a pleasure to note that these beautiful old-timers are giving us so much pleasure again.

Nemastylis cœlestina.—In reference to this beautiful blue flower of the Iris family, a correspondent says the flowers are two inches and sometimes three inches in diameter. The inner course of petals are only an inch across the flower; but the purple sepals are really a part of the flower, and make it two inches over. We should be glad to know whether Florida has any common name for this pretty wild flower.

Spiræa venusta —Mr. Momme, Wallingford, Pa., writes: "Permit me to say that Spiræa venusta is not a distinct species, but a garden-sport of Spiræa lobata.

The difference is as you say in the petals and stamens, the color of which is of a light rose in the Spiræa lobata, and of a purple rose in the Spiræa venusta, and the latter is of a stronger habit. Mr. Burgevin will find a description in Vilmorin's "Illustrirte Blumen-Gærtnerei," by Dr. J. Grœnlaud and Th. Ruempler, Secretary-General of the Horticultural Society of Erfurt; published at Berlin, 1873; Vol. I., page 1159, No. 3, Spiræa lobata var. venusta Hortsmun.

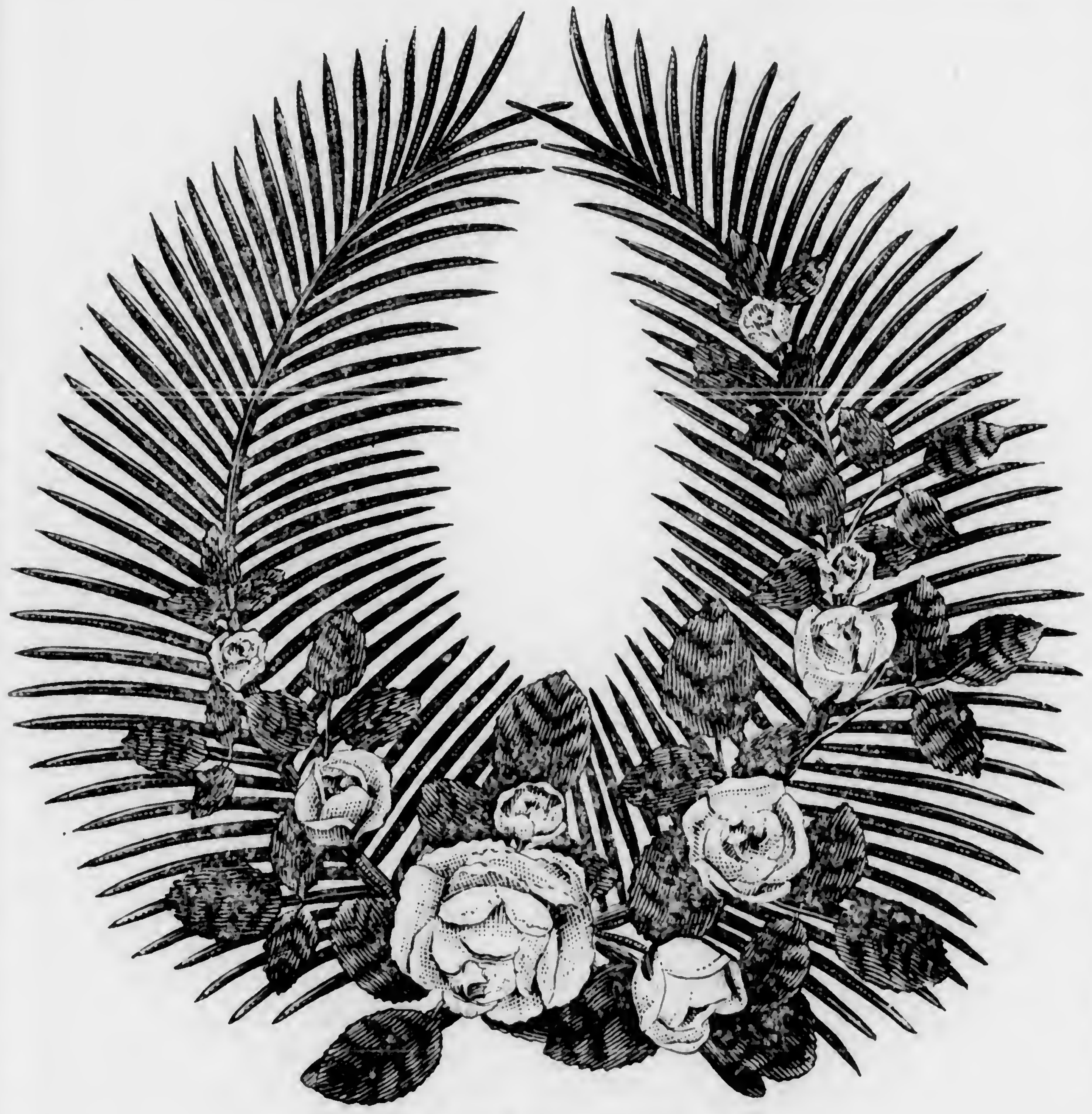
Variegated American Elder—Sambucus Canadensis.—Mr. John F. Clark, Maud P. O., Bucks Co., Pa., says: "I discovered a beautiful form of variegated elder, recently, growing along the roadside about one mile from here. The plant was exposed to full sunlight, and seemed perfectly healthy. The foliage was beautifully mottled with yellow and white. As the elders are easily grown from both hard and soft wood, I took several of them home, which I hope to raise."

Mina lobata.—In a note Mr. John F. Clark says: "Last spring I purchased a packet of the 'charming half-hardy Mexican Climbing Annual.' The packet contained six seeds. Five of them germinated, and grew up to be nice plants before they were set out. They were planted out in May, and they continued to grow until it covered the allotted space. But at this writing it stands 'blossomless, fruitless, and in solitude.'"

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Flowers are pretty, and plants are pretty, and there is considerable pleasure to be derived from growing them—but it is well to stop and think awhile on how much of pleasure we owe to taste in arrangement. One would believe no one objects to this, that everyone knows instinctively that some arrangement is necessary. No one would certainly leave plants or cut flowers in the windows or on the tables just as they are thrown down. They must be put together some way so that they may be, by their very arrangement, made beautiful. But every day's experience shows that it is profitable to stop and think; for, though everybody instinctively feels arrangement desirable, not one in a dozen draws half the beauty from floral adornments that good arrangement is capable of affording. It does not seem to be understood that there are principles in beauty. It is not correct, as people sometimes argue, that the impression of beauty is a mere notion and that what is pretty in one person's eye is ugly in another's. It has been so argued even by eminent persons. Addison once gave a sarcastic essay on beauty by a fancy sketch of a nation of people with whom no lady was handsome who had not goitre on the neck. The larger the swelling the prettier. The more severe the mumps the more beauty.



A Tasteful Wreath.

But the slavery of fashion is wholly another thing from a perception of beauty. Take any thing outside of that which has not been tampered with by fashion, and put it to a vote of unprejudiced observers, and ninety per cent. will vote on one side that it is or is not beautiful. Now such an agreement can only be from some underlying principle which forces such an agreement, and these principles form what is known as the science of beauty.

We give in illustration of our remarks, a wreath, the cut of which has been kindly loaned to us for the purpose by August Rolker & Sons, of New York, who make a specialty of furnishing florists' supplies. We are quite sure ninety in a hundred would pronounce it a model of beauty. We are as sure that scores of wreaths made up by persons every day would not be pronounced by ten in a hundred to have any special beauty. There must be some reason for this. Let us examine? There is a somewhat circular outline which is pleasing in most things—yet a pure circle is monotonous. It is a great point that, though regular in outline, it is not monotonously so. The roses chosen to ornament the wreath—flowers with a circular outline—are in harmony with the outline of the wreath; and yet the slight irregularity of the wreath's outline is not forgotten by the smaller size of the roses as the work progresses. The heaviest flowers are in the heaviest portions of the wreath, as are the heavier rose leaves, and the heavier foliage of the Sago palm from which the wreath proper is made. The cutting up of the frond into numerous pinnules gives the whole a grace it could never possess if it were but a uniform solid face—and simply because it breaks up monotony. But the pinnules are not formed in exactly parallel lines. They all taper by graceful curves to a point, besides curving themselves. It is rarely that we find such a multitude of points of beauty developed in one object as we find here, and think no better illustration of the true principles of the beautiful science could be found anywhere.

Those of us who are endeavoring to increase human pleasure by encouraging gardening are often met with the question, what is the use of it all? They regard money spent on flowers or in similar work in ornamental gardening as absolutely thrown away. They have no idea of sentiment. The school-boy, who in response to the request to "define mouth" replied that it was "a hole in the face to stuff pie in" would no doubt grow into a grand recruit for this class of people. They have no doubt all descended from those who objected to the costly ointment that was spread over the Saviour's feet. Perhaps the boy may learn that there is much more of sentiment about the mouth than stuffing it with pie. The mouth may furnish lips for kissing as well as a throat for swallowing, and he will not stop to ask "what is the use" of the oscultory act.

Peter Osbeck, writing an account of his voyage to China, in 1757, says in his quaint old way:

"We are used to ask what a thing is good for? And often rashly think that alone useful which serves for medicine, cloaths, and food; as if the eye had no claim to its gratifications, and as if what is agreeable was not connected with what is useful. The dresses and utensils of distant countries are admired and carefully collected—why should not then the works of the Creator deserve at least an equal share of attention?"

And we feel quite sure that we in the gardening way, who have labored for so many years since old Osbeck wrote, will feel encouraged to go on, with the support which such excellent sentiments give.

COMMUNICATIONS.

WATERING PLANTS.

BY MANSFIELD MILTON.

No operation in the greenhouse requires more care and good judgment than watering, especially where there is a general collection of plants, some of which require an abundance of moisture at all times, while alongside there is a plant probably requiring to be kept on the dry side. A single thermometer can govern a house full of plants as to temperature, but, it requires with watering individual attention. The soil may be suitable, the light, heat and ventilation all that is necessary; if the treatment with regard to water has not been properly and timely attended to disappointment shall be the result.

We are apt to look upon the soil or the temperature as being the essentials to the successful culture of plants; often questions are asked relative to these two requirements, but how seldom do we hear the watering inquired about; everybody appears to think they can supply water according to the plant's requirements, but this is a mistake. The most successful gardeners and florists in the country to-day, are those who give the closest attention to watering, and while they cannot describe orally or in writing the exact conditions for successful watering, they look upon it as the base of their success.

The geographical distribution of plants should be one of the main studies of the successful gardener, so that the natural conditions in their native habitats be known. We also want to know the conditions of moisture, atmospheric and otherwise, the daily and nightly temperatures, their seasons, and how long the plants rest. It is not enough to know that a plant comes from a certain country, as altitude makes a wonderful difference as regards atmospheric conditions. Take some of our cool growing orchids, from the high altitudes of Central America, and try to grow them in the same conditions as regards temperature and humidity that are found on the sea-level in that country, and failure would be the result.

Although in a good many cases we can improve the conditions of plants by departing from their natural state as regards soil and temperature, still the same degree of humidity should be closely adhered to.

A general knowledge of vegetable physiology to the gardener is the light which successfully pilots him through the dark avenues of difficulties, which are continually being met while endeavoring to cultivate plants collected from almost every point of the universe. How is this knowledge to be acquired but by studying the works of men who have given it their special study.

The GARDENERS' MONTHLY is the only periodical in the country from which any light on vegetable physiology can be obtained; if there is another please give me the name of it.

I do not mean to say but that there have been, and are still, men who are very successful gardeners and florists who could not tell you anything scientifically about plants, but these same men are practicing and demonstrating by their practice the true requirements of plant life, which have been acquired by years of close study and observation.

Youngstown, Ohio, September 12, 1887.

CALANTHE VESTITA.

BY CHAS. E. PARNELL.

The clothed Calanthe, Calanthe vestita, is in my opinion one of the most handsome species of Calanthe in cultivation. It is a fine terrestrial orchid, and was discovered growing near Moulmein in 1846 by Mr. Lobb, a collector in the employment of Messrs. Veitch & Son, London, England.

The leaves are radical, from twelve to sixteen inches in length, and of a pale green color, and the delicate yet beautiful flowers are produced on terminal, upright spikes from six to ten inches in length, and they are well covered with large flowers of a delicate pure white, stained in the center with rich, deep crimson, the striking contrast rendering the flowers extremely interesting. It is a species that is easily cultivated, growing in a compost of sandy peat and leaf mould. The pot or pan should be at least half filled with drainage, and this should be well covered with moss before the plant or the compost is placed therein.

This Calanthe must be grown in a light, airy part of the house to perfect the full development of its flowers, as well as to color them good. The plants require to be carefully watered, and should never be saturated at their roots. Give a moderate supply only. When dormant give a temperature of about 55°, and keep the plants rather dry. When growing give more water, and if possible a higher temperature, from 60° to 70°. Propagation is effected by a careful division of the plant at the root. The generic name is derived from "Kalos," beautiful, and "anthos," a flower.

Queens, N. Y.

ORCHIDS IN SEPTEMBER AT THE UNITED STATES BOTANIC GARDENS.

BY M. H. LESTER.

This is not a time of the year when one would expect many orchids in bloom; still I found a good many very interesting and beautiful to look at in a walk through the plants at the Botanic Gardens last week.

I was glad to renew my acquaintance with the lovely little Cypripedium niveum. It is a dwarf-growing variety with pretty foliage. The flowers have a peculiar satiny hue, are white on the inside, and prettily marked.

Cypripedium Stonei makes stems two feet high, and bears three or four lovely flowers on each. It lasts long in beauty and requires but little care.

Of Brassias I found a goodly number in bloom, although not so brilliant in color as others of the orchid family. I think these spider orchids are very interesting. They last long in perfection, and are very useful at this season.

I also found a very beautiful form of Cattleya Gaskelliana, darker than the type, with flowers five inches across.

Aërides odoratum majus, with great long spikes of flowers, was diffusing its fragrance through the house as usual.

Also Aërides Lobbii, with long, branching stems and numerous flowers, in which rosy pink and white predominate.

Dendrobeum Dearii is one of the very best white flowering dendrobes in cultivation, and if let alone will bloom pretty much all the time. It makes both terminal and lateral racemes of bloom, from both old and new stems. The individual flowers are butterfly-like, nearly three inches across, and last several weeks in good condition. It is highly prized by cultivators as an exhibition plant.

Washington, D. C.

EDITORIAL NOTES.

ROSE, AMERICAN BEAUTY.—In order to correct some misconceptions on the part of the author of the following, Canon Girdlestone, we give it entire from the *Garden*:

"There has been a good deal of discussion lately as to the identity (or otherwise) of the so-called Hybrid Tea American Beauty with a French Hybrid Perpetual of some ten years' standing. The question was first mooted in the May issue of the *Journal des Roses*, by Fr. Harms, of Hamburgh, in an article written to prove that American Beauty was nothing more nor less than H. P. Madame Ferdinand Jamain (Ledechaux, 1875). An indignant denial of the charge was naturally expected from America, but instead of this there seems to be a tendency to admit the truth of Fr. Harms' statement, and also to defend the proceeding of distributing an old rose as something new.

"Mr. D. M. Dunning, in an article on the subject in the current number of the GARDENERS' MONTHLY, says: 'That the prominent florists in Washington who are thoroughly conversant with the circumstances of its (American Beauty's) reputed origin there, have, ever since its introduction, had very grave doubts as to its being an American seedling;' and the editor of the GARDENERS' MONTHLY, commenting on Mr. Dunning's article, says: 'Suppose it (American Beauty) was an old rose, no one knew that it had any merit. We hold that a man who discovers a new merit is as much entitled to reward as one who discovers a new rose.' From all which it seems reasonable to suppose that American Beauty is only Madame Ferdinand Jamain re-edited, and the whole matter is well summed up by Mr. D. M. Dunning when he says, 'The discovery of its excellent forcing qualities was undoubtedly the principal cause of its rapid introduction into this country (America), as, aside from its superb fragrance, it is not to many people an attractive rose.' That is the worst of it, for it is absolutely immaterial to growers in this country whether it be really Madame Ferdinand Jamain or truly American Beauty; whether it be an old Hybrid Perpetual or a new Hybrid Tea; whether, in fact, it be a fresh seedling, or an old variety so long discarded that it could be safely brought forward again without much risk of being immediately recognized; for, whatever it may be called, the fact, unfortunately, remains that it is one of the least attractive roses in existence. Of a dreary purplish color, almost entirely lacking in form or finish, and with only a moderate habit of growth, its one good quality of fragrance does not redeem it from being almost the ugliest rose in cultivation. Already certain nurserymen have been heard suggesting that at least the name should be changed from American Beauty to the Yankee Beast, and as it obviously will never be grown in this country, it is not very material whether it be really a novelty or a revival. If it is Madame Ferdinand Jamain, it is easy to see why that variety was so promptly discarded; if it is a new seedling, it will not on that account remain in cultivation. It may be useful as a rose to force under glass, because W. F. Bennett, which will do nothing out of doors, is said to be valuable for that purpose (although it has never been our good fortune to see attractive blooms even of that variety), but out of doors Madame American Ferdinand Beauty Jamain is utterly worthless.

"The following remark, with which Mr. D. M. Dunning concludes his article, shall serve as a peg on which shortly to hang a few notes on a subject which has been receiving a good deal of attention of late years: 'Have we not already many roses with excellent qualities slumbering among the ranks of the discarded? Would it not be profitable to expend a portion of the time and energy now so freely given to the production of new varieties towards investigating the merits of some of the old?'

"Although public opinion is seldom wrong in its ultimate estimate of merit, yet there are two excuses for trying to upset the verdict of our predecessors in certain cases; first, that many roses that flourish in one locality or country do nothing in another, and that, therefore, if they have not been widely tried, they may possibly never have had a fair chance; secondly, that as the bases upon which the merits of flowers have been estimated are liable to change, there may survive, among discarded varieties, some roses which, by existing canons of taste, would prove highly desirable. Thus, while it cannot reasonably be expected that among roses which growers generally have decided to be worthless there will be found many of great beauty or value, still it is not impossible that a few may be shown to deserve a better position than has ever been allowed them."

So far as we know, there has been no tendency to admit the truth of Mr. Harms' statement, except on the ground of courtesy to Mr. Harms. For our part, we have our doubts of the identity of the two, but no one will want to indignantly deny till the exact comparison is made. No one has ever stated that it was a seedling. There has been no attempt to create the impression that it was. That it was simply found growing without a name in a Washington garden has been publicly announced from the first.

It is evident that Canon Girdlestone wholly misconceives the points at issue. He argues that it will never be popular as an out-of-door rose. No one here ever said it would be.

But the undisputed fact is, that it not only will be, but actually is, one of the most popular of roses in America for cutting purposes in winter, and that it promises to long continue so.

The verdict of our predecessors on this point has never been taken.

Surely Mr. Girdlestone can see the difference.

ORNAMENTING A GRAPE DISH.—The Philadelphia *Public Ledger* advises to set purple and gold flowers around the black and white grapes in the dish.

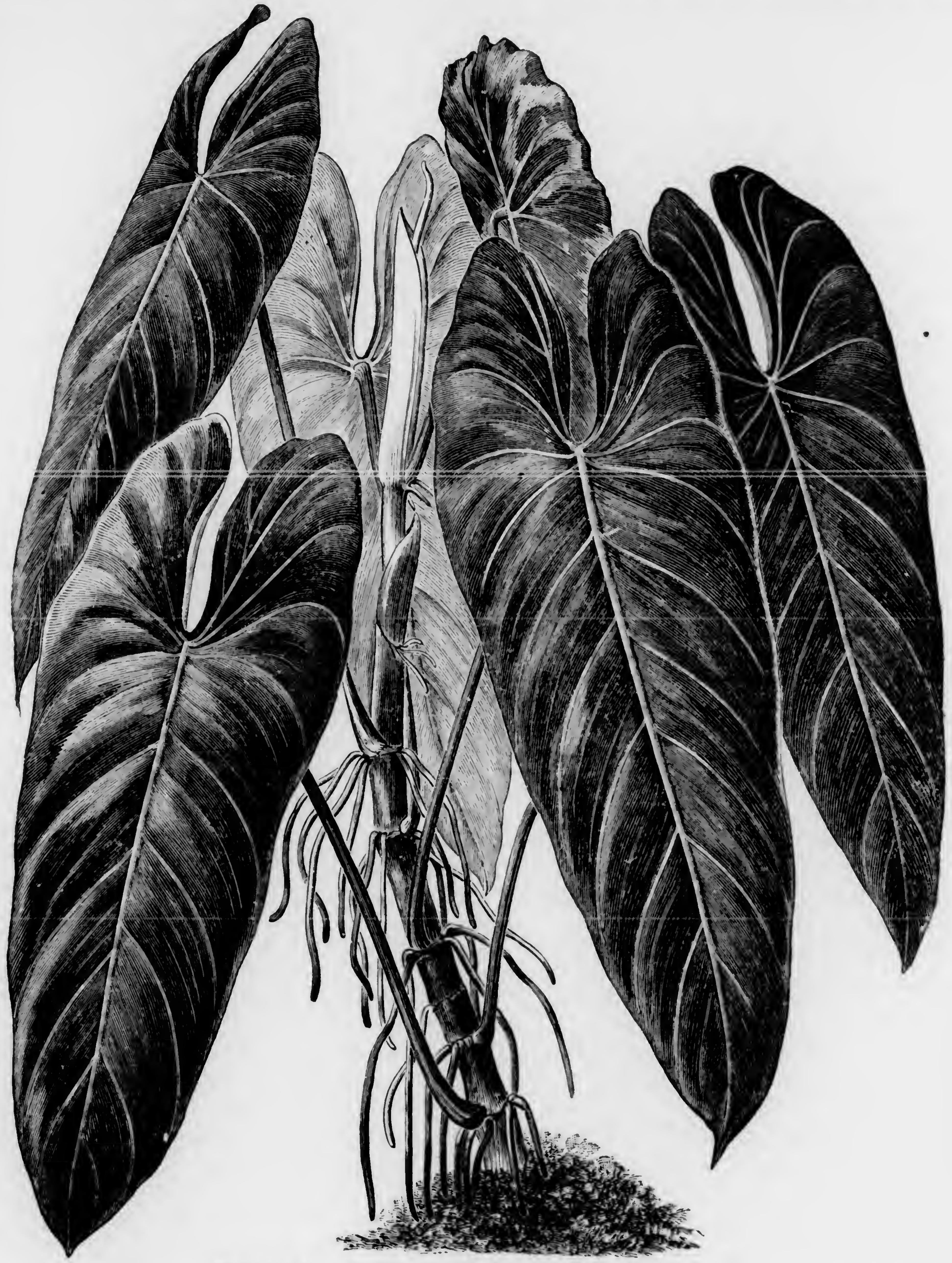
THE LARGE VANDA SANDERIANA.—At a recent sale of orchids in New York interest centered in a beautiful specimen of the Vanda Sanderiana, said to be the largest in the world. It was brought from India in 1880 to London, and sold to the late Mrs. Morgan for 400 guineas. At the Morgan sale it was purchased by Mr. Osborn for $900. It sold for $470.

HOT WATER CIRCULATION.—Mr. James Duncan Raynolds, of Riverside, Illinois, makes a very intelligent criticism in the *American Florist* on all that has been written about hot-water pipes flowing up or down hill, and thus sums up his conclusions; "To recapitulate, it seems that to secure the best circulation the following are the proper conditions: (1) Set the heater as far below level of greenhouse flow as possible. (2) Carry the pipes at once to the highest level intended, and keep them high, letting all the fall be a vertical one on returning to the heater. (3) See that air vents are provided wherever a downward turn is made."

ANOTHER LARGE SAGO PALM.—Though not exactly west of the Mississippi, it is so near the line that it is worth noting, that the Memphis Floral Co. have two Sago Palms, on one of which at the present time there are one hundred and one leaves.

PURPLE BEECH LEAVES WITH CUT FLOWERS.—The Philadelphia *Public Ledger* says:

"The leaves of the copper beech are made up with corsage bouquets of Niphetos roses. Sheaves of roses, tied around with their natural stems like a standing sheaf of wheat, are the newest fancy for center piece decoration to the table."



Philodendron Andreanum. (See description, page 334.)

STEPHANOTIS FLORIBUNDA.—Wm. Lyne says: "In an article sent you and published in GARDENERS' MONTHLY for September, I described my treatment of Stephanotis floribunda, and confined myself to that plant in particular. Mr. Albert Momme queries in October number, and is quoted as saying: 'Mr. Lyne says by exposing the plant to the full effects of the air and sun the mealy bugs are kept off entirely, and no mealy bug need apply.' I do not wish to be understood as saying or using such language as that quoted. But I do say, that since the plant was placed out nand Jamain or truly American Beauty ; whether it be an old Hybrid Perpetual or a new Hybrid Tea; whether, in fact, it be a fresh seedling, or an old variety so long discarded that it could be safely brought forward again without much risk of being immediately recognized; for, whatever it may be called, the fact, unfortunately, remains that it is one of the least attractive roses in existence. Of a dreary purplish color, almost entirely lacking in form or finish, and with only a moderate habit of growth, its one good quality of fragrance does not redeem it from being almost the ugliest rose in cultivation. Already certain nurserymen have been heard suggesting that at least the name should be changed from American Beauty to the Yankee Beast, and as it obviously will never be grown in this country, it is not very material whether it be really a novelty or a revival. If it is Madame Ferdinand Jamain, it is easy to see why that variety was so promptly discarded ; if it is a new seedling, it will not on that account remain in cultivation. It may be useful as a rose to force under glass, because W. F. Bennett, which will do nothing out of doors, is said to be valuable for that purpose (although it has never been our good fortune to see attractive blooms even of that variety), but out of doors Madame American Ferdinand Beauty Jamain is utterly worthless.

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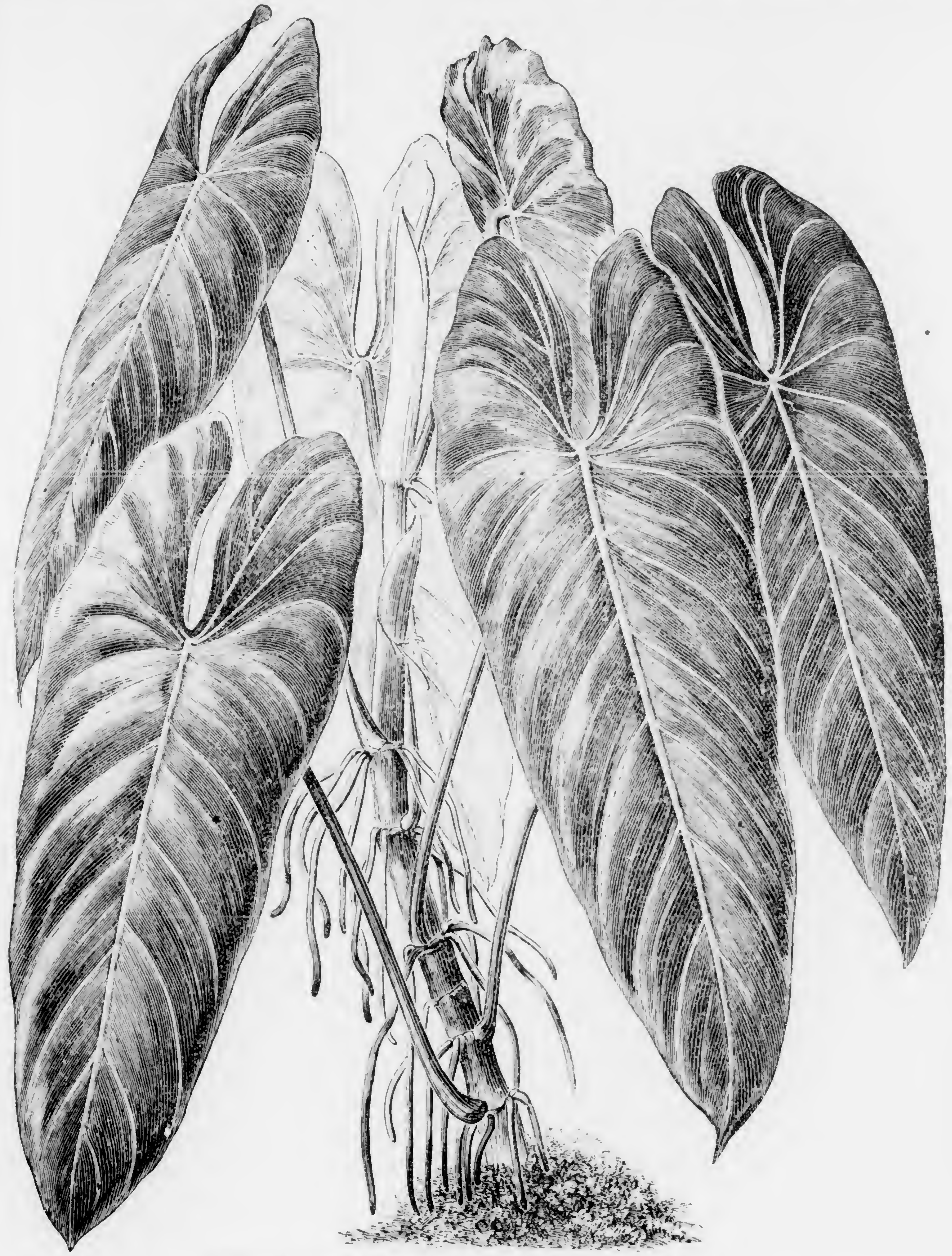

Philodendron Andreanum. (See description, page 334.)

INTENTIONAL SECOND EXPOSURE

of doors to take its chances in the full glare of the sun, it has revived and assumed a very healthy appearance for two seasons. It has been kept for two winters in a house badly infested with mealy bugs. I have just examined it at this writing, as it stands in its winter quarters, and find it entirely free from the pest, all of which I attribute solely to its robust, healthy condition; hence my remark, 'No mealy bugs need apply.'

"In relation to the Editor's foot-note regarding the heavy rains washing off the insects, that would hardly apply with us this last summer, as the plant and vegetation in general had scarcely enough rain all summer to wash the dust off.

"For the information of Mr. Momme, I will state that our plants, when set out for the summer, are not troubled with mealy bugs. The trouble with us commences after the plants are taken in."

NEW OR RARE PLANTS.

PHILODENDRON ANDREANUM (see cut, p. 333).—The Aroids now so generally under culture are everywhere appreciated for their singular foliage, which often has the added interest of striking tints and markings. A lovely bronzy tinted one has recently been brought out by Messrs. Veitch & Son, which we desire to introduce to our readers, and have obtained from these gentlemen the following account of it:

"A striking Aroid, first discovered by M. André, of Paris, and subsequently introduced by us direct from New Granada; it is by far the finest species of Philodendron for decorative purposes ever brought under cultivation. Its stately foliage when fully developed may be compared, for size and effectiveness, with that of Anthurium Veitchii and A. Warocqueanum.

"The cordiform-lanceolate leaves are deflected vertically from a robust erect footstalk, and attain a length of four to five feet. When first expanded on the young plant they are of a decided scarlet tinge shaded with brown, when a little older they become a bronzy red-brown before finally changing to the normal bright velvety green of the mature leaves. Through all these changes the colors are relieved and enhanced by the white midrib and nerves that branch from it.

"We received the award of a First Class Certificate for this plant at the Royal Horticultural Society's Show at Liverpool, in June, 1886, under the name of Philodendron grandidens, where it formed one of the principal attractions of the group of plants exhibited by us. We also received a Certificate of Merit for it from the Royal Botanic Society two years previous under the same name."

We may add that the name "Philodendron" signifies "a lover of trees," over which some species in tropical countries love to climb.

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

POOR SEEDS.

BY T. O'N.

Many seeds are enclosed in a shell or outer covering that becomes harder and harder as the age increases. The germ may retain its original vitality for many years, but in proportion as there is more or less difficulty in breaking the shell, the growth at first will be more or less feeble. The older the seed the nearer the surface it should be planted, as, if planted deep, the effort to break the shell and the additional effort to get through the soil will exhaust the strength of the young plant to such a degree as to unfit it to contend with the elements above the surface. That is the reason why many flower seeds are sown only on the surface. Before sowing Osage orange seed of any age, it is best to start it by mixing with sand wet with warm water, and keep it in a warm place until the germ breaks through the shell.

The manner of saving seeds and the atmospheric conditions that prevail at the time, has much to do with the after growth. The shell of new seeds is sometimes as hard as seeds two or three years old, and the latter may germinate quicker than the former. I have known of a fine crop of Ruta-bagas produced from seed nine years old, Osage orange seed five years old, grow comparatively free, and fresh seed of the same not grow at all. There is no radical rule or guide to determine what will grow. Fresh seeds are more likely to grow than older seeds, but do not always. In the case of cucumber, squash, melon, etc., gardeners prefer to sow older seeds, for the reason that the growth of vine is not so vigorous and the fruit likely to be better than from new seed. Any one who has had much to do with the growing or testing of seeds must come to the conclusion that "there is a Divinity that shapes our ends, rough hew them as we may." *Philadelphia.*

[The above is from the pen of one who has had a wide range of experience on the subject of which it treats. If any additional force could be given to it, it might be noted that those who are experts in raising rare tree or flower seeds, and have only a few choice ones at hand, usually file or cut through with a sharp knife the shells before sowing. Seeds of Victoria regia are rarely successful unless treated in this way.—Ed. G. M.]

KELSEY PLUM.

BY PROFESSOR H. E. VAN DEMAN.

By the October number of your magazine, I see that the Editor states that this fruit is only a variety of Prunus domestica, and that "the Japanese have no native plum that is fit to eat." Now this seems to me a grave mistake. As to Kelsey, I have seen the trees growing in the southern part of the United States, and have seen and eaten the fruit, and have specimens of it in my office here at this time. If there is a difference between P. chicasa and P. Americana, then there is a difference between P. domestica and the species to which the Kelsey belongs, although there is doubt as to its name. The flowers of all these species are not widely different, but their other characteristics are enough so to make many species. And so it is with Kelsey, for the leaves, bark, fruit, and form of the tree, are decidedly peculiar.

It has been my privilege to frequently talk about Japanese plums with Mr. Tamari, who is a thorough student of botany and practical horticulture, and a native of Japan, and he stated plainly that this plum is a variety of a native species and that it did not belong to P. domestica, but to a species which he thought should be called P. hattan or hadan. He said it was hardy only in southern Japan, and we know that it has repeatedly winter-killed even in northern Texas and similar latitudes in the United States. If friend Meehan knows of varieties of P. domestica that are semi-tropical let him tell us.

Mr. Tamari told me of other species of Prunus only native in Japan, to which varieties belong that are not only scientifically distinct, but bearing fruit of sweet and delicious flavor. One such variety has been this year fruited by Luther Burbank, at Santa Rosa, Cal., which is red to the stone.

All the varieties of P. mume are only fit for pickling; and, as is well known, we have native species here of this genus that are equally bad.

Bureau of Pomology, U. S. Dept. of Agriculture.
Washington, D. C.

[We have had no opportunity to examine botanically, plants of the Japan Plums. Plants bought by the Editor have died in the winter, affording no chance to see foliage or flower. The statement that they were varieties of P. domestica was made on the authority of communications in other magazines.

The Department of Agriculture has an intelligent Botanical Division—and if there is any native species of plum in Japan capable of giving such improved forms as these, that department should be able to furnish the information, without the Editor or his correspondents guessing at it.—Ed. G. M.]

IRREGULAR RUSSET IN FRUIT.

BY W. B. CARR.

I have a remarkable statement which I wish to present to you and your readers, and for the literal truth of which I hold myself responsible. I present it solely in the interest of science.

A friend of mine (whose name shall be given on call) living at Irene, Loudon Co., Virginia, had, in the fall of 1879, a dwarf pear tree, very thrifty to all appearance, but which had never borne fruit. At my suggestion he took a spade and in a circle of about three feet radius severed the lateral roots, thus checking growth to promote fruitfulness.

The operation was highly successful. In 1880 the tree bore a crop of, I suppose, not less than two bushels of nice Bartlett pears. But the remarkable part of the story remains to be told.

Every pear, without an exception, so far as I know, borne that year by that tree, as if in retaliation, was marked with a conspicuous zone or band, traced by nature quite around its equator, nearly a quarter of an inch wide, and of a peculiar drab or russet color, strangely contrasting with the bright green of the remaining surface.

You will wish, no doubt, to know the subsequent history of this tree. Together with some half dozen trees, similar in age and kind, in or near the same small inclosure, it languished in the year 1881 and died outright in 1882. This tree alone, of all the number, was subjected to the treatment of root-pruning, and it alone bore the banded fruit.

If the facts now given appear strange or incredible I have only to say that they can be verified by six or eight living creditable witnesses. I offer no explanation of these singular phenomena, but I sincerely and earnestly ask that, if any of your readers have any well-attested facts bearing upon this curious subject, they will kindly report them to the undersigned.

1131 9th street, n. w., Washington, D. C.

[The production of russet in fruit, whether wholly or partially covering them, has never been made a matter of special study, so far as we know, yet it presents a very inviting field for original research. We only know, in a general way, that russet is formed by the destruction of the outer cuticle; the inner one, when exposed to the atmosphere, becoming brown. This roughness of skin can readily be detected by examining the russet with a pocket lens. We have seen apples on trees near bon-fires, where the fire was not near enough to materially injure the apple, injuring only the outer cuticle, have russet on the exposed sides; and it is not uncommon in orchards to find apples russety some seasons that are wholly free at others. Just why these things are so, we have never met with any intelligent reason, though guesses are plenty—even some very intelligent persons sometimes guessing that it comes from cross-fertilization, and is to be taken as evidence that there is an immediate influence of pollen on fruit.

In regard to the present case, we have seen the drab or russet color on the ends of pears that should normally be light yellow, but not in a regular zone round the middle, as described here. No root-pruning had anything to do with those cases, nor could it have here.

Though, as we have said, there has been no solution afforded worthy of being styled scientific, there is some good reason to believe that similar processes are at work to those which operate on the bark of trees. The skin of an apple is but modified bark, and in many apples there are small spots, as there are small spots in young bark. In bark they are known as suber or cork-cells. In time these develop, and just as they develop the bark peels off. In the cherry and birch they develop laterally, and hence the bark peels off in rings or circles. In the shell-bark hickory, silver maple and buttonwood tree, they develop in such a manner that the bark peels off in thick flakes. In the beech they are so fine and slender that they operate only under the outer cuticle, which comes off like cob-webs continually, so that the tree has never rough and scaly bark.

The great probability is that the russet in the apple is produced by some such process. It may work round a fruit as described by our correspondent, as it does in the bark of the cherry or birch, or irregularly, as in other trees.

We have simply tried our hands at a guess as to the cause in this instance, hoping that any one who has made the matter one of close scientific observation will give us a more definite solution of the curious case.

NOTES ON GRAPES.

BY D. M. DUNNING.

This has been an unusually good year for grapes, and a small vineyard of 150 vines comprising 34 varieties, planted in the spring of 1885, largely for experimental purposes, has given so much interest and satisfaction to the writer that it is thought a few notes in reference to the better varieties, may be of interest to others.

At the same time a lean-to-vinery with heating apparatus was erected for the cultivation of the foreign varieties, which was extended the following year. It is 114 feet long, divided into three apartments, has 32 vines and 17 varieties.

It has been very successful, some bunches the present year weighing as high as four pounds, and fond hopes are entertained of a bunch or two next year at least twice as heavy.

The first hardy grapes to ripen this year were Moore's Early, which was ripe and gone early in August. It was followed soon by the Herbert, Worden, Brighton, Empire State, Lindley, and by the first week in September at least a dozen kinds were in good eating condition. The long warm season since has ripened the latest of them, of which Goethe and Lady Washington, now, October 3, bring up the rear. These are two of the most beautiful kinds, almost as good in quality as the foreigners, some clusters of the Lady Washington, weighing over a pound.

Catawba and Iona are perfectly ripened, though not as fine in quality as I have seen them on Seneca Lake. But no matter how well ripened, either of these varieties, there is always a slight astringency when the seeds are removed, not pleasant to every one.

The Delaware alone of the 34 varieties planted has not yet fruited. The vines have made a strong growth; perhaps the ground was too rich, plenty of manure, ground bone, and wood ashes were used. For the purpose of comparing a few of the best of the early varieties of hardy grapes a small gathering of amateur horticulturists were assembled about the 15th of September, all of whom were enthusiastic over grape culture. The varieties presented were of:

Foreign.—Muscat of Alexandria, Muscat Hamburgh, and Black Hamburgh.

Native.—Agawam, Brighton, Empire State, Niagara, Herbert, Lindley, Martha, Lady, Barry, Wilder, Duchess, Worden, and Salem.

All the varieties had been carefully grown, under the most favorable conditions, and were labeled as gathered to prevent any possible confusion.

A general good time was enjoyed for a half hour or more, eating, admiring and comparing grapes and experiences, when on summing up, the prevailing opinion seemed to be as follows: In the three foreign varieties little difference in quality was discerned.

The Muscats were of course higher flavored and perhaps a little finer in quality, but the Black Hamburgh was considered good enough for any one.

Among the native varieties I surprised my friends by the superior quality of the Brighton, which was pronounced by all, decidedly better than any other of its class, and fully equal to any of the foreign varieties. On the other natives some differences of opinion arose, but the general opinion would seem to range the next five as follows: Empire State, Duchess, Herbert, Lindley and Worden. Greater differences of opinion arose over the Niagara than any other, some being enthusiastic in its praise, and others disliking it on account of its strong musky flavor.

I think too much cannot be said in favor of the Brighton grape. It is perfectly hardy, a strong healthy grower, bearing freely of large beautiful bunches and large berries. The seeds separate from the pulp when eaten, and when ripe there is not the slightest trace of acid, so that it can be eaten by invalids, and persons with sensitive digestive organs, as freely as any of the foreign varieties. It is early and hangs well, but should be bagged to keep it from the birds. The specimens presented were bagged when about half grown. This does not injure the quality in the least, but delays the period of ripening perhaps a week.

The Empire State is a new white grape of fine quality, and a strong grower, but has not yet given me any but small or straggling bunches. I hope it will improve in this as the vines grow older. The Duchess is a delicious grape of delicate organization, not desirable except in the hands of experienced cultivators.

The Herbert I find some two weeks earlier than any other of the black Rogers, coming between Moore's Early and Worden, and is very desirable in every respect. I am surprised at the Herbert, and shall plant more of it. Barry and Wilder, very much alike, are full two weeks later and not as large clusters nor so good in quality as Herbert.

Of the three red Rogers, Lindley, Salem and Agawam, the Lindley is the earliest and best, giving long beautiful bunches; skin thinner than the others, berries medium, sweet and good.

Salem is the darkest in color, skin very thick, bunches medium, berries very large, sweet but somewhat pulpy.

Agawam is about half way between the two above in many respects; bunch large and under good cultivation only is it solid and full.

Worden is as superior to Concord as the latter is to Clinton or Hartford. It is early and one of the best.

Lady and Martha are two very good white grapes, the former some ten days earlier, otherwise quite similar. They have a strong flavor bordering on the Niagara, and probably cannot hold a place with that variety, which will at least double them in quantity.

What a great boon to the people is the improved varieties of hardy native grapes now grown. My early recollections of grapes are that they were sour, colicky things, requiring the sharp appetite of a robust boy to call them good, and scarce at that.

Now they are sweet, wholesome and good, and can be had in abundance by any one who has a square rod of ground and the energy to plant a few vines of the better varieties. *Auburn, N. Y.*

NOTES ON SEPTEMBER NUMBER.

BY W. F. BASSETT.

Early Peaches, p. 268.—When Amsden's June, Alexander, etc., were first offered, it was claimed that they would not rot like Hale's Early, but I have a nice thrifty tree of the Amsden, large enough to bear a bushel, and did not save a single peach from it. E. Rivers is claimed to be free from rot, but a neighbor says he planted quite a number and all the fruit rots.

Early Pears.—Doyenne d'Ete is planted here for very early and is better than Madeleine. Osband's Summer is much better than either, but a little later, and B. Giffard still a little later but very much superior in flavor, but a slow and uncertain grower. If the Wilder is equal to Giffard in flavor, as early as Doyenne de Ete, and larger and at the same time succeeds generally, it will be a very great acquisition, but only a few varieties do this, and the majority are only of local value.

Poor Seeds.—I have often observed the difference in time required for new and old seeds to vegetate, and in one instance made quite a fair success with old onion seed by scalding it, or perhaps I should say pouring hot water on it, before planting.

Tap Roots.—Mr. Douglas' excellent article deserves a careful reading, and there are some points which should be especially noted by those who think spontaneous growth occurs where no seeds could exist.

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EDITORIAL NOTES.

Fruit-growing at Jerusalem.—Mr. H. C. Hart says in the Transactions of the Royal Irish Academy:

> "One of the most showy of all the flowers is Anemone coronaria, which Canon Tristram thinks is the real 'Lily of the Field.' Another familiar plant, Ranunculus Asiaticus, much resembles it, and a showy bulb is Sternbergia macrantha with its great golden blossoms.
>
> "Jerusalem, 2400 feet above sea level, has a mild climate compared with most of the plateau sub-region. The Date Palm, though not a native nor able to ripen its fruit, can exist, one well-known tree illustrating the fact. The Prickly Pear is naturalized. Olives, Apricots, Grapes, Tomatoes and Figs thrive well around Jerusalem, but Oranges, Lemons, Bread and Water Melons will not, although ripening their fruit at Jaffa. Apples, Pears and Strawberries have all failed, while Nectarines and Pomegranates grow well. At Marsaba, in the courtyard of the convent, is an old Date tree said to have been planted A. D. 490; the most evident point of interest seems to be the fact of its producing seedless or stoneless fruits."

Poetical Allusions to Pears.—In Mr. Rivers' paper on Pears, published recently the lecturer notes that Shakespeare only mentions this fruit once ("Merry Wives of Windsor," n. 5), but in 'Winter's Tale,' n. 2, the poet mentions Wardens—

I must have saffron to color Warden pies—

and Wardens were undoubtedly cooking Pears (cf. Bacon, "Essay xlvi."). Again, Mr. Rivers asserts that Herrick does not mention this fruit. Surely he never can have looked through that poet's "Hesperides?" I find no less than seven separate allusions there to Pears, and he, besides Sir John Suckling, has immortalized the Katharine Pear—

So Cherries blush and Katherine Pears.
—*The Maiden's Blush*, "*Hesperides.*"

Herrick also mentions the Warden—

Of roasted Warden or baked Pear.
—*To Phillis*, "*Hesperides.*"

And to a Christmas custom, in which the Pear is alluded to—

Wassail the trees that they may bear
You many a Plum and many a Pear.
—*Ceremonies for Christmas*, "*Hesperides.*"

Spenser speaks of the Pear in his "Shepard's Calendar" (March 3), and Chaucer, who perhaps more than any other poet loved the freshness of spring and early morning, alludes to the beauty of the Pear tree in its full bloom—

She was well more blissful on to see
Than is the new Perjonetti tree.
—"*Millere's Tale,*" *line 61.*

All who have read the "Canterbury Tales" will remember the incident of the Pear tree in the "Marchand's Tale."—*P. E. N., Upper Norwood, in Garden.*

Pear Blight.—When noticing Prof. Arthur's treatise on blight in the pear, we noted that much of the hesitation that we had in accepting conclusions of those who had heretofore experimented came from an uncertainty as to whether we all understood each other by the term "blights." There are undoubtedly many distinct diseases or forms of diseases that might be called "blights," but the authors of treatises speak of "Pear blight" as if there was one, only one, thing to be discussed.

Now, what we know as "fire blight" is that sudden disease, which seems to destroy immense branches, apparently in a few hours. When the branch is examined, however, it is evident that the seat of the disease is at the base of the dead branch. The wood when shaved is found brown and dry for the space of an inch or more in length, and extending round the branch, apparently girdling it. This portion has a well-defined line. When we shave the wood above this line it is not brown, but of that yellowish green tint which branches have when they die from drying up. There is not the possibility of a doubt that the seat of the trouble is in that limited spot. But we do not find that any of the treatises make any special note whatever of this fact.

Just now we recur to this matter through some correspondence of a more than usually intelligent character between Dr. Anderson and Col. Leighton, the well-known Pear grower of Norfolk, Va., in the *Cornucopia* of that city.

Dr. Anderson, an expert microscopist, follows the disease as it progresses through all its stages, and finds no bacteria until after fermentation has begun; and Col. Leighton identifies the appearance of the disease in the "twigs" with the occurrence of a great extreme in temperature. This may be a means of stirring the "cause" into activity, but can scarcely be considered the cause itself.

Though, from analogy, we feel that low microscopic organisms, as has been explained by Professors Arthur and Burrill, must be closely connected with all these different Pear "blights," we have to confess that the demonstration has not been made as clear to our mind as we should like it to be.

Weight of Beurre Diel Pears.—At Newcastle-on-Tyne, in England, fruit was produced last year of this variety weighing 29 ounces.

The Phylloxera in Germany.—Phylloxera has lately been gaining so much ground in the wine-growing district of the Rheinland that the German Chancellor has at last summoned a conference of the competent authorities to consider what ought to be done. They have found that their ridiculous laws to keep it out have wholly failed. If the national suspicion against France will permit them, their consideration of what ought to be done would soon be ended. The French, who have used vines grafted on American stocks, laugh at Phylloxera.

The Black-rot in Grapes.—This disease has been more virulent in New Jersey than ever before—even the famous Concord, supposed to be proof against all kinds of Cryptogamic pests, succumbing to the enemy. Kinds of the Clinton class, usually useful only for wine-making purposes, and which seem to withstand the attacks of Phylloxera better than others, also withstand fungi better; and it is rumored that the great settlement of Vineland is seriously thinking of rooting out even Concord grapes, giving up the effort to raise table fruit, and go into wine-making like its rival city of Egg Harbor. Vineland was started as a model total abstinence town, and its laws are very strict against selling liquor within its limits. But there seems to be nothing in the city charter to prevent "fleecing the Egyptians," and, though not knowing the taste of liquor themselves, they can manufacture it and sell it to other places that have not yet forbidden its purchase and sale. By the time all the world has become prohibition and followed the example of Vineland, the city will become like unto Thebes or Palmyra, if it depends on Clinton grapes.

A Huge Grape-Vine.—There is a grape-vine in Carpinteria, the property of Jacob Wilson, that exceeds the famous Montecito vine that was forwarded in 1876 to the Centennial. At the butt it measures five feet ten inches, and five feet from the ground five feet two inches. It is of the Mission variety, and is reputed to be the largest grape-vine in the world. It is supported by a trellis, covering an area of ground almost one hundred feet square. Mr. Wilson informed us that the vine, two years ago, produced four tons of grapes.—*Santa Barbara Independent.*

Collar Grafting Apple Trees.—Mr. D. W. Cozard, of La Cygne, Kansas, is a warm advocate of crown or collar grafting seedling apple trees. This takes the whole seedling root, and not merely the piece of root into two or three as usually divided.

Duchess of Oldenberg Apple.—This large and beautiful apple seems finer than usual this season. Specimens, seven ounces, are not uncommon. It is not of the finest flavor—none of the Russian apples are—but its freedom from many troubles, and the beauty of the fruit, striped so freely with crimson, make it desirable.

The Fallawater Apple.—The sketch we recently gave of the Madeleine pear, as in the line of making the reader well acquainted with kinds that have worked their way into favor all over the country, seems to have met with great favor. The tendency to illustrate that which is merely new is strong, but thousands never see more than the picture, for, before the owner of the first large stock of plants has barely had time, in commercial phrase, to unload, the novelty dies. These experiences remind one of the quaint epitaph on a month old baby on an English tombstone:

"If so soon am I done for,
What was I begun for?"

We have thought to do for some old stand-by among apples what we have done for the pear, and, on looking through Downing, note that he has no illustration of the Fallawater apple. We supply that omission now. Its popularity is attested by the fact that Downing quotes no less than sixteen synonyms, of which Tulpehocken, Brubacker, Beauty of the West and Fornwalder are best known. In Pennsylvania, where it was raised, no good orchard is complete without it. Its original name seems to have been Pfarrer Walter, its raiser's cognomen, but Fallawater is the acceptable name.

In our last we noted that the Australians were using root-cuttings of the Northern Spy as a stock in general use for apples. This might do as well, for it is a very strong grower. The fruit is of enormous size and is very solid and heavy. This has been somewhat against it, as where trees stand by themselves winds are apt to blow the fruit off before ripe. The stem is also very short, and fruit has been known to press itself off by growth against the branch to which it is attached. These, we believe, are all its faults. It is very sub-acid till thoroughly ripe, say in February, when its sharp character is mellowed and approved.

The Delaware Winter and Lawver Apples.—We find the following in the *Delaware Farm and Home:*

"The question has, on several occasions, been raised whether the Delaware Winter apple is not a variety known by some other name, and recently it has been asserted that it is probably the Lawver. Both these apples were on exhibition at the State Fair last week, and at the suggestion of J. G. Brown a committee was appointed to examine them. The report is given below:

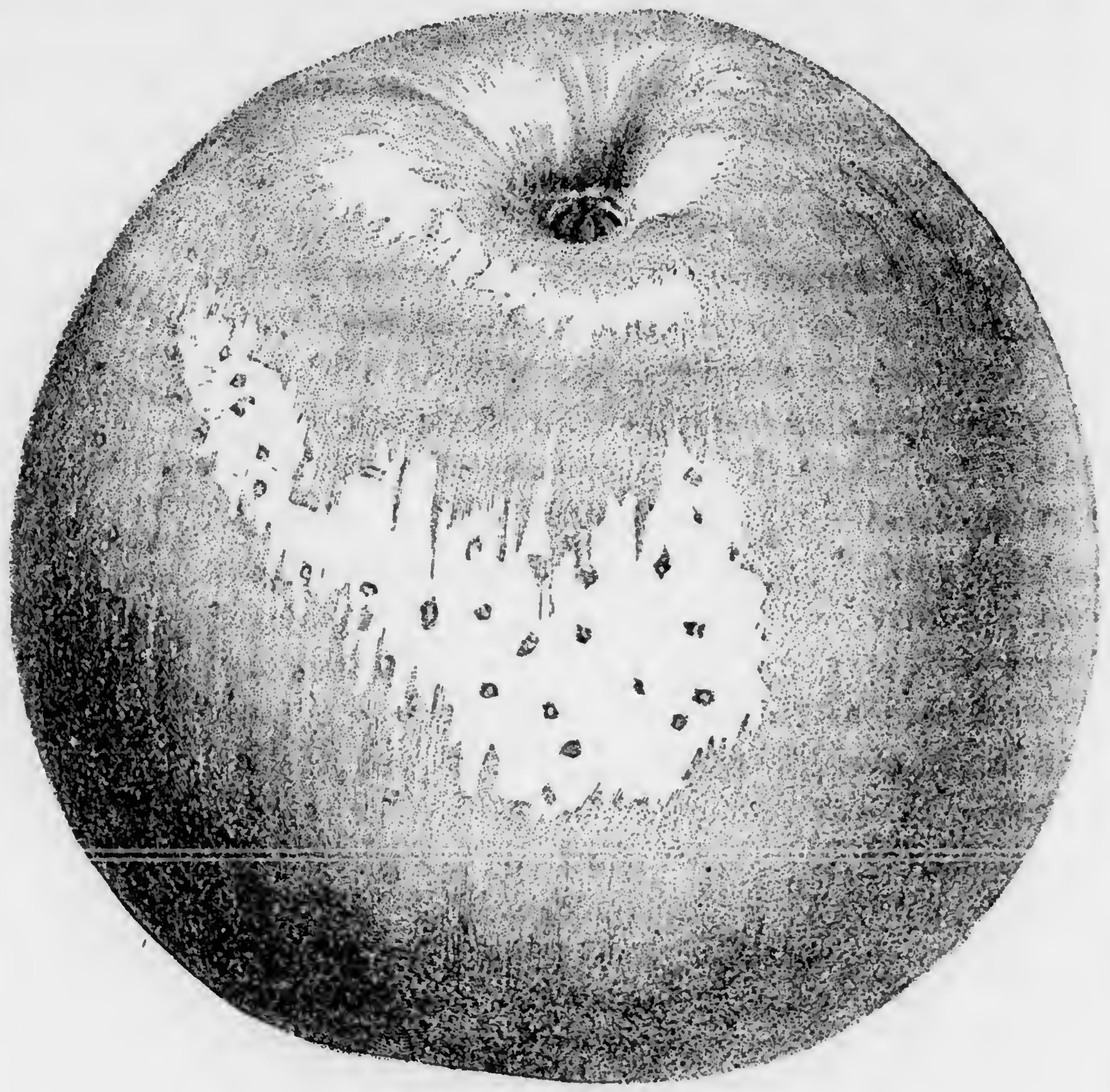
'Fairview Park, Sept. 30, 1887.

'We, the undersigned, Committee of the Delaware State Fair, appointed to decide upon the identity of the Lawver and the Delaware Winter apples, have carefully examined the specimens on exhibition as such apples, and decide that they are distinct, differing in flavor, shape, color and general appearance.

G. W. Killen,
A. L. Hudson, } Committee.'"
P. Emerson,

We understand that Mr. J. G. Brown, mentioned above, and conceded to be one of the best pomologists in the State, who would give no opinion one year ago on the vexed question, now regards the apples as distinct.

Erratic Behaviour of some Extra Early Peaches.—Some years ago it was noted of the then popular Hale's Early Peach, that it was unreliable. Some years it would not be early. The same is now being noticed in France of the Amsden. In 1884 and 1885 Mr. Schwaller, of Marseilles, ripened Amsden on the 10th of June. In 1886 they did not ripen till the 16th, and the past year not till the 26th.


Fallawater Apple.

The Chickasaw Plum.—Ever since the variety of Chickasaw, known as Wild Goose, was introduced, there have been a large number of others named and disseminated.

Some of these are quite good, but we do not think any yet approach the old garden varieties in value. There are possibly some few places where the old plum will not grow—then these Chickasaws furnish fair substitutes.

A Large Canteloupe.—Mr. Ott, of Doylestown, Pa., raised a canteloupe the past season that weighed thirteen pounds.

Marketing Raspberries.—A correspondent of the *Country Gentleman* makes the good point that it is more profitable to market raspberries in pint than in quart boxes. They do not mash near as much in the smaller bulk.

White Asparagus.—People usually prefer green asparagus because the white is stringy, but when the white is tender it is considered much better suited to refined tastes. To get the white part tender it is necessary to plant it deep in light soil. It is difficult to sell white asparagus in market, because the customer cannot be made to believe that it is tender, white as usually sold being stringy.

Dry Beans.—Last year only 100,000 bushels of beans were produced in the whole of New England, and more than 500,000 bushels were imported to supply the demand of the Yankee people for the raw material of culture. Boston alone in 1886 sold 350,000 bushels of beans, 70 per cent. whereof were raised in New York State. In the same year 4,800,000 cans of baked beans were put up and shipped to distant parts by a single Boston firm.

Forced Rhubarb.—Those who like this fresh from the plant, instead of the doubtful potted or canned rhubarb, can readily have it by potting or boxing a few roots and putting it under a greenhouse stage, or warm cellar. A very little heat brings it forward. Asparagus can be brought forward in the same way.

SCRAPS AND QUERIES.

Stunted Pear Trees.—"Subscriber," Baltimore, Md., writes: "We have a great many pear trees in the garden from fifteen to thirty years of age. The bark is tight and scaly; when they do bear fruit, it is hard and full of worms; some seasons the trees lose all their leaves before the end of August.

"The garden has been ploughed once a year with a two-horse plow as close as the man can get to the trees. I thought this ploughing must have injured the young roots from time to time as we can't see any small fibery root."

The pear trees have become stunted, and very likely the close ploughing has injured the roots, cutting off so many that not enough good ones are left to furnish a full supply to the tree, and hence they have been starved. Even when plenty of manure is applied with the ploughing, the tree will be starved when so large a proportion of its roots are destroyed.

Precisely the same results often follow from leaving an orchard in grass without an occasional top-dressing. The grass and the roots together soon eat up the little food, and again the tree will be starved.

The perfection of orchard culture is to have the surface in grass, provided an occasional top-dressing of manure can be applied.

The question with you will be, the trees being in this condition, what can be done to increase the vital power?

First trim out all the weakest of the stunted shoots. Paint the rest of the tree with pure linseed oil. Be sure that it is pure—if adulterated it may kill the tree. Slit the hide-bound bark, up and down with a knife, which will the more readily permit expansion when the new growth comes. Nature intended this bark to crack and split, but the insects prevented nature's law from operating. By artificially slitting you help nature against the insects. Then haul road sand, earth from the headlands, or any refuse soil you can get, and cover the whole surface of the ground under the branches an inch or more deep. If you have any manure to spare to put with it, all the better. Then abandon the plowing, but do not let strong vegetation grow till the roots of the pear have full possession of the ground.

If you do this we think you will have a free, vigorous growth next summer that will surprise those who knew them in their days of sickness and suffering.

Curculio-proof Plums.—There is no such thing as a plum that a curculio will not puncture if it has a mind to. At times a tree may be neglected because the insect has found enough fruit elsewhere in which to deposit its eggs, or it may have deposited eggs that did not hatch—for even beetle's eggs, like any other, are "addled" sometimes. In the latter case the marks are left but the plum does not rot finally as when the egg gives up its "worm." As for the Chickasaw varieties being "proof," the Editor has seen wild trees in North Carolina as badly punctured as any in a cultivated state.

Twig Blight in the Pear.—Mr. G. L. B. Leighton, President of the Horticultural and Pomological Society of Norfolk, Va., writes that for several years he has been able to tell nine days ahead, when the twig blight in the pear will appear.

Idaho Pear.—The "Idaho Pear Company," Lewistown, Idaho, sends us a nice pear. On first glance we exclaim, "A nice Glout Morceau!" but remembering it is October and not late winter, we look more closely and note that it is more irregular than Glout Morceau, more depressed; the supply that omission now. Its popularity is attested by the fact that Downing quotes no less than sixteen synonyms, of which Tulpehocken, Brubacker, Beauty of the West and Fornwalder are best known. In Pennsylvania, where it was raised, no good orchard is complete without it. Its original name seems to have been Pfarrer Walter, its raiser's cognomen, but Fallawater is the acceptable name.

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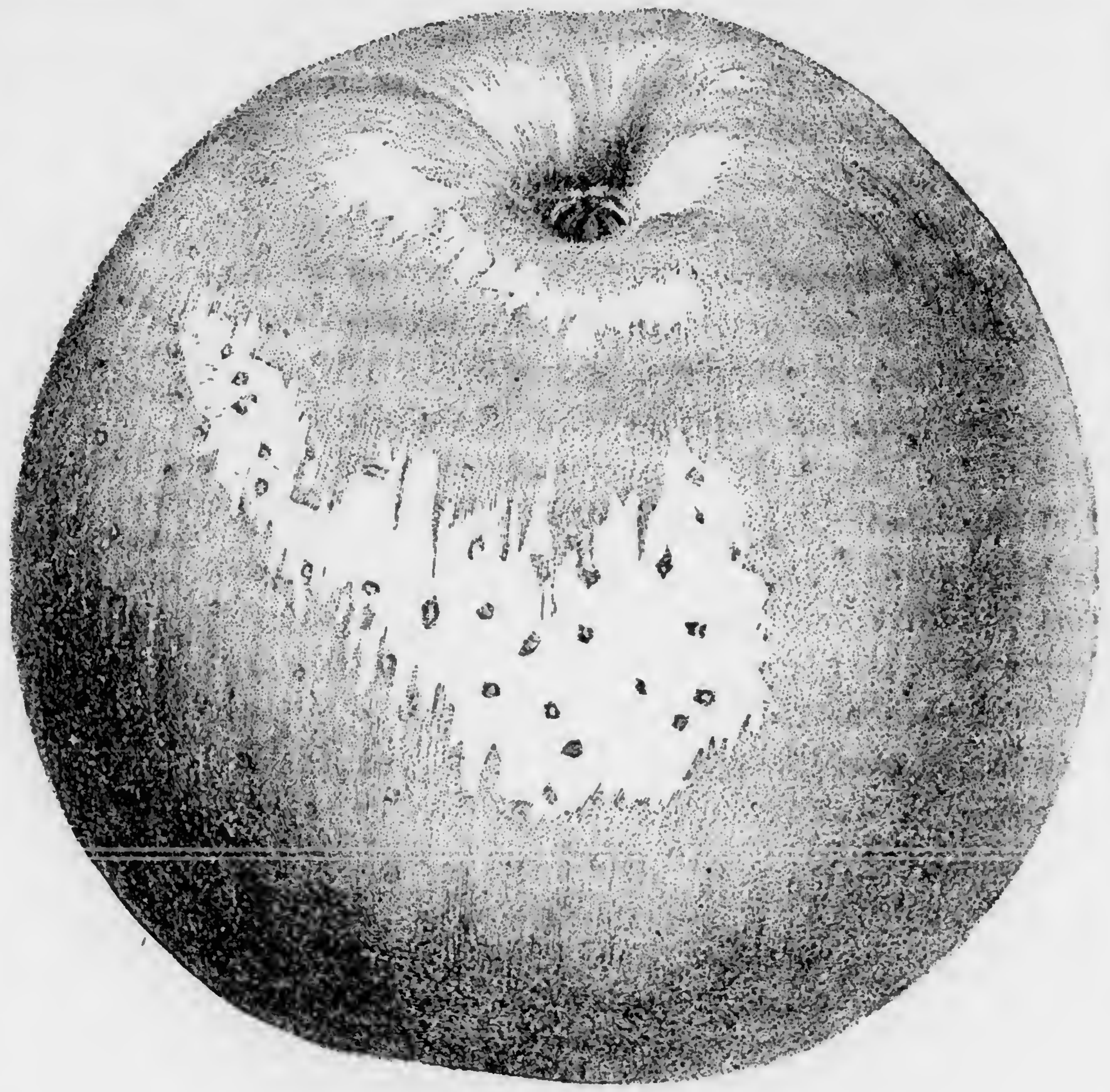

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Stunted Pear Trees.—"Subscriber," Baltimore, Md., writes: "We have a great many pear trees in the garden from fifteen to thirty years of age. The bark is tight and scaly; when they do bear fruit, it is hard and full of worms; some seasons the trees lose all their leaves before the end of August.

"The garden has been ploughed once a year with a two-horse plow as close as the man can get to the trees. I thought this ploughing must have injured the young roots from time to time as we can't see any small fibery root."

The pear trees have become stunted, and very likely the close ploughing has injured the roots, cutting off so many that not enough good ones are left to furnish a full supply to the tree, and hence they have been starved. Even when plenty of manure is applied with the ploughing, the tree will be starved when so large a proportion of its roots are destroyed.

Precisely the same results often follow from leaving an orchard in grass without an occasional top-dressing. The grass and the roots together soon eat up the little food, and again the tree will be starved.

The perfection of orchard culture is to have the surface in grass, provided an occasional top-dressing of manure can be applied.

The question with you will be, the trees being in this condition, what can be done to increase the vital power?

First trim out all the weakest of the stunted shoots. Paint the rest of the tree with pure linseed oil. Be sure that it is pure—if adulterated it may kill the tree. Slit the hide-bound bark, up and down with a knife, which will the more readily permit expansion when the new growth comes. Nature intended this bark to crack and split, but the insects prevented nature's law from operating. By artificially slitting you help nature against the insects. Then haul road sand, earth from the headlands, or any refuse soil you can get, and cover the whole surface of the ground under the branches an inch or more deep. If you have any manure to spare to put with it, all the better. Then abandon the plowing, but do not let strong vegetation grow till the roots of the pear have full possession of the ground.

If you do this we think you will have a free, vigorous growth next summer that will surprise those who knew them in their days of sickness and suffering.

Curculio-proof Plums.—There is no such thing as a plum that a curculio will not puncture if it has a mind to. At times a tree may be neglected because the insect has found enough fruit elsewhere in which to deposit its eggs, or it may have deposited eggs that did not hatch—for even beetle's eggs, like any other, are "addled" sometimes. In the latter case the marks are left but the plum does not rot finally as when the egg gives up its "worm." As for the Chickasaw varieties being "proof," the Editor has seen wild trees in North Carolina as badly punctured as any in a cultivated state.

Twig Blight in the Pear.—Mr. G. L. B. Leighton, President of the Horticultural and Pomological Society of Norfolk, Va., writes that for several years he has been able to tell nine days ahead, when the twig blight in the pear will appear.

Idaho Pear.—The "Idaho Pear Company," Lewistown, Idaho, sends us a nice pear. On first glance we exclaim, "A nice Glout Morceau!" but remembering it is October and not late winter, we look more closely and note that it is more irregular than Glout Morceau, more depressed; the stalk cavity very irregular; the calyx basin very shallow, much plaited, with a very small closed calyx. The dots are very numerous, and the ripening a yellow bordering on gold. In fact the fruit has quite a quince-like aspect.

The flesh is buttery, juicy, with a perfumed and delicious flavor.

There are so many good pears in existence that we have come to regard new fruits with some suspicion. It is a crime to burden the lists with new additions, unless we believe there is a vacancy to be filled by the new comer. We believe this is one of those exceptional good fruits that deserve to be welcomed, and if the growth of tree and other qualities, of which we cannot judge from a single fruit, are equal in merit to the fruit, we may congratulate the introducers in having a good thing.

FORESTRY.

EDITORIAL NOTES.

Forest Fires.—The great enemy to forestry is forest fires. People hesitate to put money into what will take years to establish, and may be only burned at last. The forest area is now computed at 450,000,000. Of this about 10,000,000 go annually under fire. At this rate our whole forest area will disappear in fifty years. Fire is more destructive than the axe of the lumberman. It is a good subject for a forestry convention.

The Wood of Paulownia.—Paulownia imperialis is used to a considerable extent as an ornamental tree, but attention has been drawn to the value of its timber. The extreme lightness of the wood has, no doubt, caused it to be neglected. A well-dried branch of a young tree is scarcely heavier than cork. The wood from an old tree is more compact, and is susceptible of a fine silky polish. The striking peculiarity of the wood is that it does not shrink, nor warp, nor split, even when green, or however thin it may be cut. The Japanese use it in thin veneers for the same purposes that we use pasteboard—to make boxes and such like articles.

We may add to the above, from the *Garden*, that it is a very popular timber tree in its own country, Japan, and it is extensively used wherever light, easily worked wood is desirable. It grows with immense rapidity in our country, in some cases increasing diameter an inch a year.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

PEACH AND PLUM HYBRIDS.

BY PROF. H. E. VAN DEMAN.

Having seen and examined a number of the peach and plum hybrids described by Prof. Munson, of Texas, in the last number of the Gardeners' Monthly, as well as the Blackman plum (so-called?), I thought it only due to the fruit growers of the country and to science to say they were hybrids, and that they were sterile. But I had no idea of being the innocent cause of the discussion which has followed. However, after seeing the trees and studying their peculiar forms, leaves and bark, I feel satisfied that they are not mere sports or monstrosities. I think a little more observation might even convert you, too, Mr. Editor.

[The Editor has never said that the Blackman plum is not a hybrid, nor that there are no hybrids between plums and peaches, as contended for by many intelligent persons; but he has said that he has seen no evidence satisfactory to his mind that specimens submitted to him are hybrids.—Ed. G. M.]

NOTES ON SEPTEMBER NUMBER.

BY W. F. BASSETT.

Host Plants of the Mistletoe, p. 275.—If you refer to the volume of the Gardeners' Monthly in which this subject was so fully discussed, I think you will find that the new fact, that the Mistletoe was wholly confined to the Sour Gum here, was so stated by me at that time.

Swamp Plants, Clethra alnifolia, p. 276.—Probably the principal reason why certain shrubs, plants and trees are found in swamps or moist land is, that the seeds there find favorable conditions for vegetating which are lacking in upland. We have Clethra here on quite dry, sandy places where a partial shade (not too dense) affords sufficient protection for the seeds to come up.

Second Flowering of Trees.—We often get a second bloom on pear trees when a very dry spell is succeeded by abundant rain, and this season the same result has followed excessive rains, and in both cases it appears to be occasioned by loss of the earlier foliage. *Hammonton, N. J.*

EDITORIAL NOTES.

Fertile Hybrids.—It is perfectly amazing how much work is needed to drive the great error out of the world that hybrids are generally sterile, simply because that much abused beast, the mule, happens to be commonly (though not absolutely) sterile. Instances of the reverse are continually before us. One of the most useful is the success of Mr. Carman of the *Rural New Yorker* in getting a productive race of grain, between wheat and rye. He has also been very successful in getting the blackberry and raspberry to unite, though Mr. Wm. Saunders of London, Canada, has occupied this part of the field before him. Latterly Mr. Carman has been successfully crossing different species of roses, and has seedlings, but we do not yet know that the hybrids are fertile or sterile.

Crossing Peculiarities.—Mr. Bennett says in crossing roses he is satisfied that the male parent or pollen decides the color of the seedling. Mr. Heffron says he found the same rule in crossing potatoes.

Companion Plants.—Symbiosis is a new term applied by vegetable physiologists to a condition in which plants live together, and aid each other, in contradistinction to parasitism in which one lives upon one and on another. For instance, in those curious occurrences known as "Fairy rings," the mycelium of fungus spreads from a common center, forming a circle several feet in diameter. It attaches itself apparently to the roots of grasses or other vegetation, and so prepares nitrogen. But the grass on the edge of the circle is always more vigorous and of a more fertile green than the grass which the fungus has not yet reached. It is further believed that those singular plants, like our Monotropa, once supposed to be parasites, but since they are not found attached to living roots called saprophytes, are really living in symbiosis with fungi, which prepare food for them, as plants would have to do for true parasites. The matter has been followed up by German and Russian botanists who are now inclined to believe that the silky threads or fungus mycelia so common on the young seedlings of oaks, beeches, and other trees used in forestry planting, are rather friendly aids than deadly enemies as heretofore supposed. There have however, been so many evidences of the truly parasitic nature and injurious character of some of these instances to make these generalizations safe—but enough has really been made certain to give "symbiosis" a good place in the field of botanical exploration.—*Independent.*

Potato Beetle in Germany.—After all the nonsensical embarrassments to trade in order to protect the European farmers from the Colorado potato beetle, it has got there, and is reported as very bad this season. The Phylloxera, which they have also punished trade on account of, is also reported as very destructive.

Sweet Red Water Lily.—The red variety of Nymphæa odorata, has been supposed to be confined to one locality in Massachusetts. But a correspondent of the *Canadian Horticulturist* says it is abundant in the small lakes in the northern counties of Ontario, particularly in the Muskoka district.

A White Gerardia.—Mr. G. H. Van Wagener of Rye, N. Y., finds a white variety of the pretty purple Gerardia tenuifolia.

The Lotus Lily.—A correspondent at Minneapolis says that Prof. Lewis of St. Paul furnishes the following account of the Nelumbium as growing in western waters:

"The aquatic plant now being sold about the streets of our Minnesota cities and claimed by some to be identical with the lotus of the Nile, is not a water lily (Nymphæacea), but belongs to another order differing somewhat from it, that of the Nelumbiacea or water-beans. This latter order has only two genera, the Nelumbium speciosum and the Nelumbium luteum. The former is pink in color and is supposed to be the lotus sacred in the eyes of the Egyptians and the Hindus and around which so many interesting myths are clustered. The latter, (greenish yellow in color) is the Minnesota flower referred to, which, though but lately brought to notice in this region has long since been described in botanical works as growing near Philadelphia, Lake Erie and Lake Ontario.

"Here in the northwest it is found on the Minnesota river near Mendota, at Lake Minnetonka, and along the Mississippi river at the head of Lake Pepin, just above La Crosse, and also at least as far down as the head of Rock Island rapids.

"It seems that our indigenous Nelumbium luteum flowers grow most profusely in summers when a combination of low water and high temperature furnishes extra heat to the roots, and thus forces the plant. The present profuseness with which it is met in fully developed perfection, is proof that this is no 'off year' for its kind."

In connection with this the following from the *Independent* may be appended:

"Dr. Newberry notes that the lily of the Nile has wholly disappeared from that river, though there is ample evidence that it was abundant in the pre-historic times. Specimens are frequently found in mummy cases. It was not a Nelumbium, as many writers persist in stating, but a species of Nymphæa—N. lotus. The true lotus of classical history, Dr. Newberry says, is a Zizyphus—probably the one sometimes cultivated in American collections of trees, and known there as Zizyphus communis. It is very hardy in our climate, very thorny, and bears an orange-colored, round fruit, the size of a Damson plum."

DESTRUCTION OF THE ROBIN.—When the Legislature at Albany last winter passed the bill making it a misdemeanor to intentionally give food or shelter to the English or European house sparrow, there was a clause added making it lawful to shoot robins and blackbirds on Long Island and Staten Island from the first day of November to the first day of January in each year.

A clause giving permission to any duly registered pupil of a public school to gather cherries from branches that overhung the public roads during November and January was not agreed to.

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

HYBRIDS BETWEEN PEACH AND PLUM.

BY T. V. MUNSON.

The GARDENERS' MONTHLY just to hand, containing my remarks on "Peach and Plum Hybrids." You have been more kind and courteous to me than I deserved. I should have modified my paper some. You wrote a special postal giving me opportunity to do so, but unfortunately I was away from home on an extended journey in Western Texas, till too late for last month—the September number—and not seeing the paper in that number, I supposed it was considered hardly worthy your valuable space, which was, to my mind now the case; but you still have most generously printed it. If not too late, please let me say now that my boast that you dare not say which of the specimens were peach and which plum, was completely nipped in the bud by your telling, in August number, that two were pure peach and the others plum.. Two only were pure peach. Thus far you were certainly correct. As to the purity of the plum blood in the others, of course we still disagree, unless you consider I have now brought sufficient proof to sustain the supposition that they have some peach blood also. But my boast was uncourteous. I should have modified the paper by leaving it out. It was unscientific, and that far marred other statements of botanical characteristics, which alone constitute its merit. Thus in the endeavor to make my paper piquant it reads seemingly unkind. But your action in the matter shows you understood my real feelings and intention. If my conclusions in the matter are incorrectly or unscientifically drawn, I am anxious to have the errors pointed out. Please don't mete me the merits of a braggadocio by allowing me "the last word." My conclusions may not rest upon sufficient evidence, though I am yet unable to see otherwise. Such discussions are sure to stimulate further investigation, and finally elicit the truth, if conducted with that suaviter in modo, of which your blunt correspondent possesses so little.

[Our good correspondent need have made no apology. The Editor of this magazine has no interest other than advancement of horticulture, and those branches of science or art that are co-incident to it; and he is quite willing that correspondents should debate their side in their own way.

In the case of supposed hybrids between peach and plum the case still stands this way: First, it is

believed certain trees must be hybrids because they have leaves more like peach leaves than the trees from which they were raised. Secondly, because they are sterile. Thirdly, in Mr. Hillenmeyer's case, because the product was a result of actual manipulation in crossing.

We have been disposed to give some weight to the last, and felt nearly converted, till we had samples of similar character where hybridization was out of the question. It is, however, in the line of evidence we like.

The second point is of no account at all, for, with the exception of the mule, between the horse and the ass, it is beginning to be well understood hybrids are as fertile as species.

And the first has little weight because the range of natural variation is also well known to be as great as any variation through crossing.

We have been quite willing to give space to a full discussion of this question, because it would be of immense advantage to pomology if it could be demonstrated that the peach and plum would freely hybridize.—Ed. G. M.]

EDITORIAL NOTES.

WHEN SUMAC GLIMMERS RED.—

Across the sky cold clouds are driven,
From tree and shrub bright leaves are riven
And at my feet are spread;
Around me gaudy flowers gleam yellow,
Fair Nature's still most royal color,
When sumac glimmers red.

The gentian in the marsh is hiding,
There till the first cold frost abiding,
By hidden waters fed;
Through glistening leaves full shyly glancing,
In bluest dress is still entrancing,
When sumac glimmers red.

The timid swallows southward turning,
For brighter suns and flowers are yearning,
Mourning the glory fled.
For now how soon is autumn waning,
And now how fast is winter gaining,
When sumac glimmers red.

Though woods in brightest dress are gleaming,
Their bravery is but in seeming,
Shadows fall overhead.
The nights grow chill when close the flowers,
A secret sadness fills the hours
When sumac glimmers red.

Sadly I turn from autumn's splendor
Of leaves that glow in sad surrender,
And whisper "Youth hath fled."
Vague shadows of the past close round me,
Sorrow outlived again hath bound me
When sumac glimmers red.

—*Elissa M. Moore, in Open Court.*

AMERICAN WEATHER IN ENGLAND.—The mother country is getting a taste of it. 80° one day and 35° a few days after, is getting near the thing. The next experience may be 90°, and then zero. We shall be ready to annex Great Britain as part of the United States when that time comes.

LIBERALITY OF PHILADELPHIA FLORISTS.—The generous liberality of Philadelphia is becoming proverbial. Without a dollar from the taxpayers the citizens subscribed over a million dollars towards making the centennial anniversary a success. Recently it was desirable to make a success of the national festival for the centennial anniversary of the adoption of the Constitution, which the other States thought proper to be held there; and without a draft on the taxpayers again they subscribed among themselves $70,000. A banquet was to be given to the distinguished guests, and again 300 citizens came forward with $7,000 for the purpose.

The florists were determined not to be outdone in this generous spirit, and wholly at their own cost took charge of the floral decorations of the President's suite of rooms at the Lafayette Hotel. Though they had been paid thousands of dollars for the work, it could not have been better done. Yet they appreciate the card of thanks Mrs. Cleveland sent to them as highly as if it had largely increased their several bank accounts.

HOW PEDDLERS SELL.—A western lady, stopping in the office of the GARDENERS' MONTHLY to subscribe for the magazine, relates a singular experience in being cheated by peddlers:

"A man with a bag full of small bulbs on his back made his appearance in their town one fine day. It was a very rare and beautiful bulb, never before seen in the country. His firm had the whole stock. The firm did not intend to introduce it generally till next year. This year they were simply advertising it. It was to be generally let out at $3 a root; but for the advertising purposes he, the 'agent of the firm,' was instructed to find out the greatest lover of flowers in each block, and to only that one person in the block should the roots be sold at $1 each. The 'firm' supposed that next year everybody in the block, seeing it in the neighbor's garden, would rush with the three dollars for this wonderful bulb. When it bloomed next season it was Gladiolus Brenchleyensis, worth five cents." "Of course," said we, "you were not caught by chaff like this?" "Of course I was then," was the candid reply, "and so were scores of others. He emptied his bag before leaving the town; not even confining his sales to one only lady in each block, as he pretended, as we finally found when we compared notes. But I was better off than some, for he added one, giving me six for my five dollar bill."

We suppose if any one had known a Gladiolus root, and suggested the resemblance in the "rare bulb," the oily-tongued rascal would have admitted the fact, and made it blue, or sweet-scented or something.

Is it not queer that people will pass over their money to strangers in this way? The flattering compliment of being the "favored lady" evidently did the business here.

Yellow Cypress.—One of the misfortunes of common names is their ready transference from one thing to another, till nomenclature becomes utterly confused. Thus *Gardening Illustrated* says the colonists on the Pacific call the great Arbor Vitæ, Thuja gigantea, yellow cedar. But the Arbor Vitæ there is white cedar; yellow cedar, or cypress, is the Nootka Sound cypress—Cupressus Nootkaensis.

Our Annual Frontispiece.—As most of our readers know, we give in our December number, as a frontispiece to the whole volume, a portrait of some one of our distinguished living horticultural authors. We shall have in the December issue of this year the portrait of the author of one of our most popular works on rose culture, which we think will be fully appreciated. The demands for our December numbers are always great—the portrait and full index being given of late years in addition to the reading columns, and outside of the regular subscription price of the magazine. When the publisher first gave this addition, it was in place of the useless "chromos" then popular. They have had their little day, while the Gardeners' Monthly's gift to its subscribers is yearly more and more appreciated.

Love of Flowers in the Arctics.—Lieut. Schwatka tells the *Independent* that:

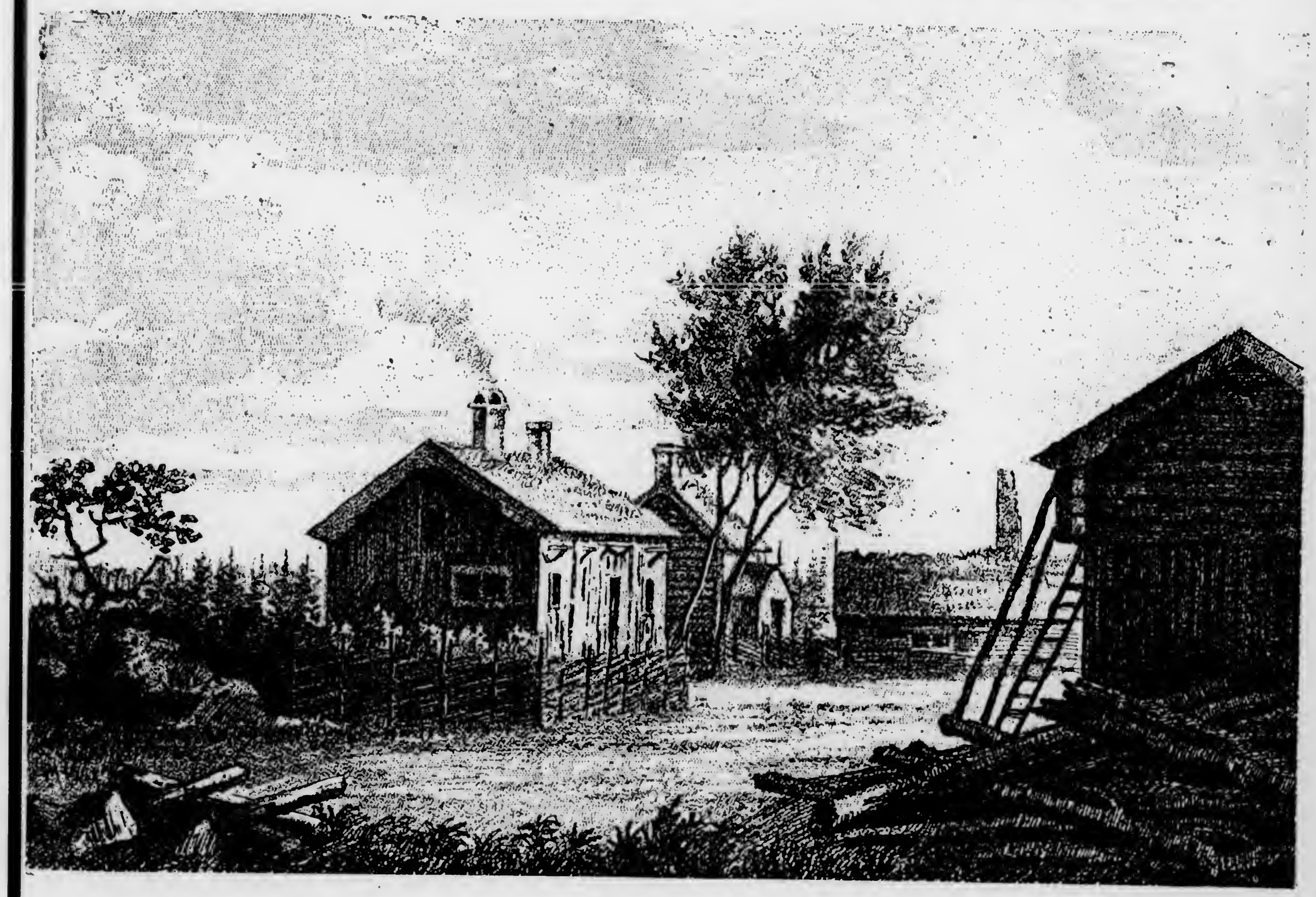
"Those Eskimo brought in contact with white men not only showed more appreciation for flowers, but the greater floral display in their land gave them better facilities for indulging in it. This interest is found among the little children in probably the same proportion that exists among them in civilized communities. Of course, nowhere in Eskimo land does there appear anything like an appreciation of flowers, or any other beauties of nature, to the extent we find at home, and the idea of cultivating them for their pretty displays would be to them absurd in the extreme. The most it ever amounts to would never exceed that displayed by our lower classes when among the wild flowers, and even then not among those from the cities who appreciate these beauties much more than equally intelligent people constantly thrown among them. I have seen them pick flowers and apparently appreciate them, now and then even gathering little bunches, and when one reflects that these flowers of the frigid zones seldom have the slightest perfume to add to their plain beauty, one is not at a loss to understand why so little interest is shown in them, although they are almost the only display that nature gives to cheer this lone land. Much of their interest, as would be expected, is of a practical nature; for when the first blossoms appeared on those few plants that later on were to give them a stinted supply of berries (there are three varieties of these in the country adjacent to North Hudson's Bay with which I became acquainted) we heard more of them than all others put together; but this should not be held too strongly against them, for we have the same in the spring nearly as much among our own people.

An Early Philadelphia Nursery.—John McArann was probably a Scotchman. About 1804 he became gardener for William Hamilton, of the "Woodlands," and was in his employ until about 1811. In the meantime he had laid out and improved Lemon Hill (now in Fairmount Park) for Henry Pratt, the owner. In 1811 he went in partnership with Thomas Birch, who had leased George Honey's Garden, which occupied the square from Arch to Race and from Schuylkill Second (Twenty-first) to Schuylkill Third (Twentieth) street. Honey's Garden, in addition to its plants and trees, conservatories and nurseries, was attractive as a place of resort, made so by the invitation of the proprietors and the furnishing of refreshments to the visitors, among which were tea, coffee, milk, mead, metheglin, ice cream, etc. Birch & McArann continued at Honey's Garden for eleven years, when they dissolved partnership and relinquished control to August D'Arass.

McArann, in 1823, established his nursery and seed garden on the lot already described between Seventeenth and Eighteenth streets. In 1824 he advertised that he was prepared to supply visitors with strawberries and cream. In 1825 he published a similar notice, adding that he had gone to a great expense to fit out his garden in a style superior to any about the city, "as he hoped to make it a place of resort to a genteel public."

The garden of McArann was attractive. His dwelling-house was situate not far north of Filbert street, at about 100 feet west of Seventeenth. It was an old-fashioned brick, apparently made up by additions which had been added from time to time. East of the residence the garden space, in the shape of a parallelogram, was surrounded on three sides by rows of small boxes opening on the garden, each furnished with narrow benches and tables for the accommodation of the visitors. In the house there was a bar-room for the dispensing of liquor, ice cream, fruits, confections, etc. The latter were generally carried out to the guests in the boxes, which, in the summer, were cool and agreeable, there being many trees to shade the enclosure. At night colored lanterns added a mild fascination to the scene.

Adjoining the residence on the west, and about the spot where the Church of the Covenant was afterwards built, was the Conservatory, a broad structure, some twenty or thirty feet in height, for the preservation and exhibition of fine plants and trees. It was furnished with glass doors and windows, which extended from the ground nearly to the roof, and which in summer time were left invitingly open. Adjoining this building was a hot-house, with glass roof, which extended westward as far as Eighteenth street. There were also boxes along the Filbert street front and a walk between them and the hot-house, which extended to the extreme end of the property and was bordered by trees and flowers. Either in day time or at night, when highly illuminated, McArann's was a charming place, and for several seasons was well patronized.



The Birthplace of Linnæus.

Altogether the garden enclosure contained about four acres. Between the dwelling-house and attachments extending up to Arch street there was at one time a small menagerie and aviary containing at times an eagle or two and other captive birds, and a wild animal or so, perhaps a fox—perhaps a monkey.

The northern portion of the ground was the nursery. It was thickly planted with young trees, mostly for shade purposes, and in this line McArann must have done a fine business.—*Public Ledger*.

The Birthplace of Linnæus.—When we look on the lives of great men it is remarkable to note how few are born great. Indeed, those who have achieved the greatest fame are often those who possessed few early advantages.

Linnæus was a great man. In natural history possibly, the greatest man that ever lived, yet his early advantages were extremely slim. His for he added one, giving me six for my five dollar bill."

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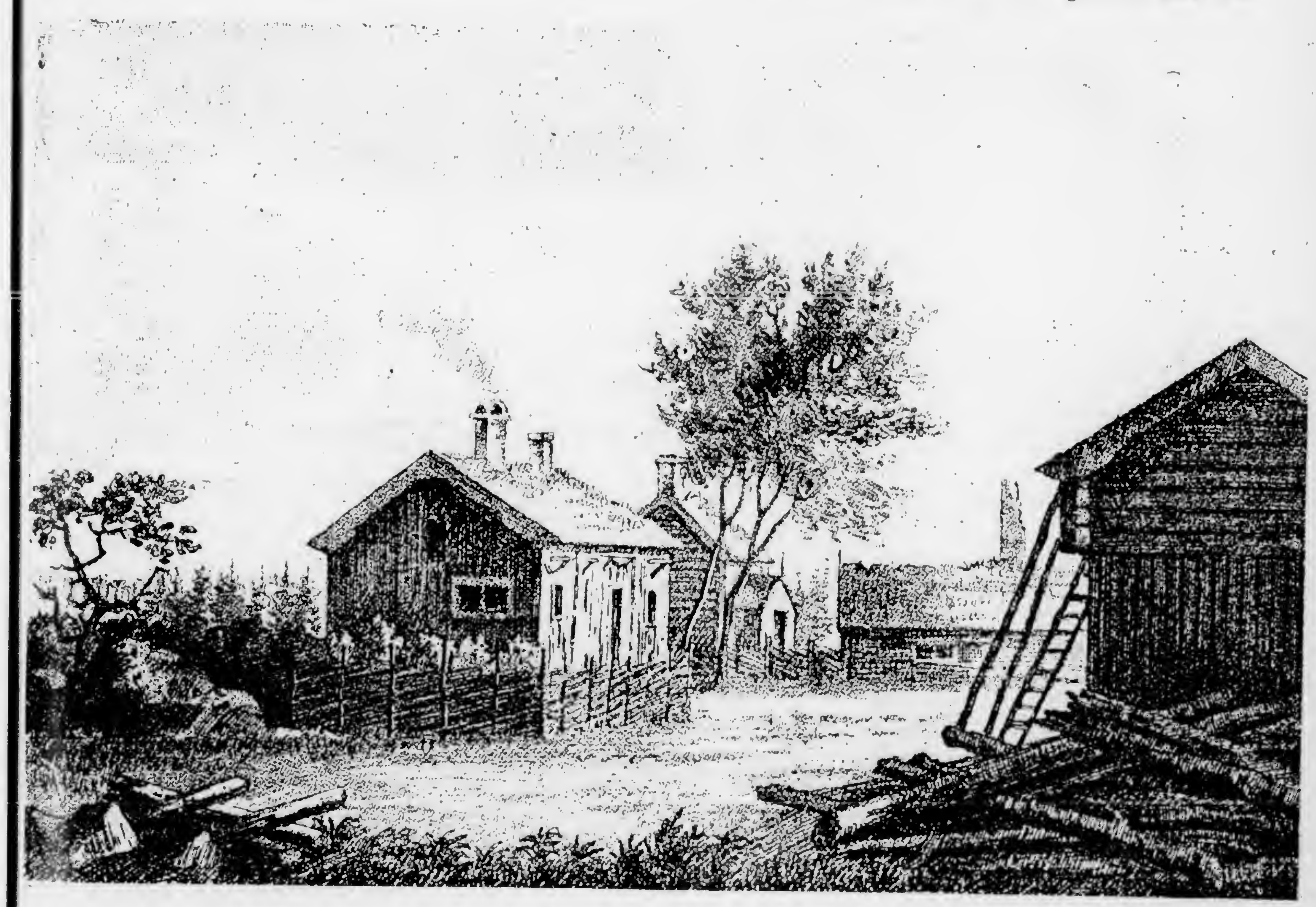
Altogether the garden enclosure contained about four acres. Between the dwelling-house and attachments extending up to Arch street there was at one time a small menagerie and aviary containing at times an eagle or two and other captive birds, and a wild animal or so, perhaps a fox—perhaps a monkey.



The Birthplace of Linnæus.

The northern portion of the ground was the nursery. It was thickly planted with young trees, mostly for shade purposes, and in this line McArann must have done a fine business.—*Public Ledger*.

THE BIRTHPLACE OF LINNÆUS.—When we look on the lives of great men it is remarkable to note how few are born great. Indeed, those who have achieved the greatest fame are often those who possessed few early advantages.

Linnæus was a great man. In natural history possibly, the greatest man that ever lived, yet his early advantages were extremely slim. His

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father was a country clergyman in a poor district in Sweden, and in a location where educational advantages, or even the advantage which cultured society gives, must have been very slim. Messrs. J. P. Englehard & Co., booksellers of Chicago, have recently published an historic account of the early life of the great naturalist, and have obligingly loaned us the annexed engraving of the house in which Linnæus was born.

Thousands of boys have had better chances; and we have no doubt many would look on such a career as that of Linnæus as owing to some good fortune. The fact is, the chance comes to every boy to be distinguished, if he has but the will to take hold of it.

Professor and Mrs. Lemmon.—It has become general to associate these two famous botanist explorers. Professor Gray states that he named the genus Lemmonia in honor of both of them. A California paper says:

> "Prof. Lemmon is well known among botanists and naturalists, and has spent many years in the pursuit of his avocation. He found the home of the common potato away up in the mountain fastnesses of Arizona, and nearly paid for his curiosity by being hunted by the Apaches. The Professor's life has been a checkered one, embracing service in the army during the rebellion, and a term in the awful prison-pen at Andersonville, Georgia, where he endured privations from which he has never fully recovered. He and his worthy wife count their friends by the hundred all up and down the coast, and the writer is proud to be considered among the number."

Charles Darwin.—Charles Robert Darwin, the naturalist, was the second son of Robert Darwin by Susannah Wedgwood, eldest daughter of the celebrated potter, to whom she was married at Marylebone Church in the year 1796. He was born at The Mount, Shrewsbury, February 12, 1809, and died April 19, 1882, aged 73 years, 2 months, and 7 days. To be full of years and rich in honors may in this world suffice as the reward of a well spent life. Charles Darwin was but little benefited by his schooling, his studies of Euclid at Shrewsbury being apparently all he had in the way of early teaching calculated to form the character that now commands reverential admiration. His education was practically his own, as commonly happens with original minds, and his greatness grew out of an early habit of observing and of inwardly comparing and analyzing facts. He was a naturalist by virtue of his love of Nature no less than by his power of generalizing and his keen penetration into the causes of phenomena that by virtue of their familiarity are but rarely questioned, or ever recognized as possible keys to universal knowledge.

Dr. Asa Gray.—Dr. Gray has returned from Europe, and is again hard at work on the Synoptical Flora.

Prof. C. S. Sargent.—The *Revue Horticole's* editor, M. Carriere, is delighted with a visit recently paid him in Paris by Professor Sargent—and speaks in the highest praise of his forthcoming illustrated work *Sylva boreali Americana*.

Dr. Maxwell T. Masters—the eminent botanist and editor of the London *Gardeners' Chronicle* has been elected Vice President of the Linnean Society. He belongs to a race of botanists. Salisbury, after whom the Maiden Hair tree is named, is one of his ancestors.

Luther Burbank's Nurseries.—These nurseries at Santa Rosa, California, are among the most enterprising in America. He is paying attention particularly to the introduction of the olive, having no less than 125,000 plants of one variety alone. This fact will give some idea of the wonderful success of this new branch of fruit growing—the olive, in California.

Haage & Schmidt.—This well known German firm celebrated the twenty-fifth year of the founding of their firm, on August 1st.

J. Eastburn Mitchell.—It is not so long since we had to record the death of Mr. W. L. Schaffer the well known President of the Pennsylvania Horticultural Society, whose magnificent gift through his sister and nephew, Dr. Schaffer, of the great Horticultural Hall in Philadelphia, to the Horticultural Society, is so well known. We now have to record the decease of his successor in the Presidency, Mr. J. Eastburn Mitchell, which occurred at his residence in Logan Square, Philadelphia, on the fifth of October, in the seventieth year of his age.

Mr. Mitchell succeeded to a very profitable business founded by his father as a manufacturer of mill stones, to which many cognate branches were subsequently added. He always had a fondness for gardening, and early in life became a member of the Pennsylvania Horticultural Society, serving faithfully in subsequent years on many varied committees. In 1858 he built a country place on Chestnut Hill near the built-up portion of Philadelphia, on which he had cold graperies, plant houses, a fine amateur collection of fruits, and beautifully laid out grounds, which

he enjoyed for several years, till, for family reasons he removed to the city proper.

He was a remarkably public spirited man, and contributed liberally to many associations and causes in which he had no special interest, but simply because of the pride he felt in the good name of the city.

When the great American Centennial was arranged for to be held in Philadelphia, he entered cordially into the effort to make it a grand success, and the writer of this believes that to Mr. Mitchell more than to any other one man, is that city indebted for the magnificent conservatory, erected at that time, and which now is among the leading attractions of Fairmount Park.

At the present time gentlemen of means who take an active part in promoting a love of horticulture in public ways, are not numerous in Philadelphia, and this makes the loss of an active worker like Mr. Mitchell at this time, one the more to be regretted.

Sarah Hoopes.—A famous amateur horticulturist, in this lady, passed away at West Chester, Pa., on the 10th of October, in her ninetieth year. It may not be too much to say that to her in a great measure we owe the famous firm of Hoopes, Brother & Thomas. The love of trees and flowers which took such active form around the homestead on Cherry Hill farm, could not but have an influence on her boys, and out of this grew the Cherry Hill nurseries, established on the grounds when but a young man by the eldest, Josiah, into which subsequently the younger, Abner, grew, and with the immense development of the business, finally George B. Thomas.

Sarah Hoopes, as she always loved to be simply called, was in many respects a remarkable woman. She had an immense power for good over everyone who came in contact with her, and not only the horticultural, but a large number of distinct social interests, have been made to progress rapidly in knowledge and happiness through Sarah Hoopes having lived in this world.

Dr. George Thomas.—Amateur horticulture, loses a rare lover of gardening in Dr. George Thomas of Whitford, Chester County, Pa., whose death occurred recently in his eightieth year. He was especially fond of rare trees and shrubs, of which his grounds contained a fine collection.

Though a regularly educated physician, he never practiced, but with abundant means he lived a comparatively retired life, doing good to every one about him with whom he came in contact. When on his death-bed, and in a delirium from which he never recovered, he exclaimed, "Let us go out and plant some trees." These were his last words.

Lindenia.—We have received from Mr. J. Linden, 100 Rue Belliard, Brussels, Belgium, the 2d part of the 3d volume of this beautiful work. It is wholly devoted to orchids, and we find the following in this issue:

> "*Cattleya virginalis*, t. 101.—A Cattleya with pure white perianth-segments and with the disc of the lip of a rich yellow color. It is supposed to be a variety of C. Eldorado, but whatever be its affinity there can be no question of its beauty.
>
> "*Cypripedium præstans*, t. 102.—A handsome Cypripedium recalling C. Stonei, and of which so much has been said in English papers lately that we need only add that the figure now given is a faithful representation of a desirable plant.
>
> "*Aërides Houlletianum*, t. 103.—The flowers of this species have cream-colored segments tipped with lilac, the broad obovate retuse lip has a paler ground color flushed with rich lilac.
>
> "*Catasetum Bungerothii var. Pottsiana*, t. 104.—Scarcely have we had time to settle down after the introduction of this fine plant than we are confronted with a variety in which the upper segments are spotted with purplish-red."

The California Florist.—We understand that arrangements are being made to bring out soon a magazine under this title. Mr. Emory G. Smith, will have a hand in it.

Annual Report of the Forestry Congress—Annual Report of the Division of Forestry of the Department of Agriculture, for 1886. By B. E. Fernow.

These two pamphlets show that there is yet a wide spread interest in the subject of forestry, and much good will follow eventually from the work now being done. Mr. Fernow is throwing himself energetically into the cause, and has got over an immense amount of work. The statistical tables are especially useful and will be for a long time of service as a work of reference. It appears from these reports that though small groups of trees are being set out in large numbers, only a few instances may be cited of forestry planting as a regular business enterprise. The forests set out by Douglas, and by Mr. Fay, seem still about the only forests planted on a scale commensurate with the importance of the work. Commissions and reports on reports from various quarters are abundant. Surely some practical good result must eventually come.

Report of the United States Department of Agriculture for 1886.—It is pleasant to note with each recurrent year, an improvement in this government publication. For, good as they have been of late years, we regard this as the most valuable ever issued. There is a more clear perception that the peculiar mission of the department is to give information that only a government can supply—and that this information should be given with scientific precision and absolute accuracy. We do not want to read over and over again what has appeared in every penny newspaper. Horticulturists generally will turn with some interest to the newly established Department of Pomology. They must remember that the volume closes with 1886 and that the pomologist had little time to study the bearings of the leading matters of interest in the field before him. Yet it is evident that he can make the division as useful as the others, as soon as he has become accustomed to the position.

In these publications which are for all the world and for all time, the incumbents learn to be careful of their statements. We suppose, if written now, after a year's additional experience, the pomologist would not say as he did in 1886, "It is now well proven that the Blackman plum is a hybrid between the peach and the plum, and like many hybrids, is sterile." In the light of modern experience, it would be difficult for the pomologist to name the "many hybrids" that are sterile—for, as in the case of the Blackman plum, the so called "sterile hybrids," are not known to be hybrids, but the fact of sterility has been taken to prove the hybridity, which is just no proof at all.

Neither, we think, would the pomologist now write: "The Japan persimmon is unlike our native species in that its flowers are perfect—that is, have stamens and pistils in one flower—while ours has the two sexes on different trees."

There is really no difference in this respect between the two species. Both are polygamous instead of diœcious and it is not at all uncommon to have trees of our species perfectly hermaphrodite; on the other hand, in their wild condition, the Japan species have the sexes separate as often as ours—and even in the forms that have been selected for cultivation, and are perpetuated by grafting, the flowers are often unisexual. The writer has seen a tree of the variety known as Yanesi, in which no flower could be found with a perfect stamen, though the fact that the tree brought forth two persimmons that year, showed that there may have been at least two flowers perfect.

We mention these points, not so much for the purpose of criticism on an exceedingly valuable report—but to express a hope that by particular accuracy they may be rendered still more valuable.

The Alphabet of Bee Culture.—By A. I. Root, Medina, Ohio. Certainly, we think, the most complete manual ever issued.

Catalogues.—Benard, E., Roses and Nursery, Orleans, France; Berger, H. H., & Co., Japanese Specialties, Alameda, Cal.; Charoze, Alexis, Trees, Shrubs, etc., La Pyramide Trelaize, Angers, France; Close, Oscar, Trees, Plants, etc., Worcester, Mass.; Cranston, John & Co., Roses, Fruit, Ornamental, King's Acre, Eng.; Engle & Bro., Wholesale Circular, Marietta, Pa.; Kelsey Bros., Trees and Shrubs, Highlands, N. C.; Kelsey, Fred. W., Special Collections, N. Y. City; Lambert & Reiter, Plants, Trier, Rheinprussen; Murdoch, John R. & A., Fruit and Ornamental, etc., Pittsburgh, Pa.; Rolker, A. & Sons, Florists' Supplies, N. Y. City; Schmitz, H., Autumn Seeds and Plants, Ghent, Belgium; Smith, Wm. H., Bulbs, Seeds, etc., Philadelphia, Pa.

SCRAPS AND QUERIES.

Lindenia.—"W. L." inquires: "On page 320, October number, you speak of 'Lindenia,' a French work on orchids. Will you be so kind as to inform me whether the text is printed in English as well as French; if so, where it can be obtained?"

Lindenia is a Belgian publication, the text printed wholly in French; but the colored plates are full-sized, and so life-like as to be well worth subscribing for, even though one does not know the language.

We do not know of any agent for the work in this country. The publication office is 52 Rue de Chaume, Ghent, Belgium.

Mr. Halliday Jackson.—The following reminiscences are by Mr. J. F. Clark:

"In the last issue of the Gardeners' Monthly I notice with regret the death of Mr. Halliday Jackson, of Chester county, Pa. In 1874, while then living near West Chester, I was making up a collection of native ferns, to be exhibited in pots at that county fall exhibition.

"Being anxious to have them all correctly named, I was obliged to call on Mr. Jackson to help me out, which he did with pleasure. Although it was quite late in the evening when I arrived at Mr. Jackson's house, he seemed to take great pleasure in showing me volume after volume of his magnificent collection of ferns from all parts of the globe. Mr. Jackson was also kind

enough to present me with a specimen from the South, Pteris aquilina var. caudata, which I shall always preserve in grateful remembrance of that venerable botanist and gentleman. Mr. Jackson was then working on the lower orders of Cryptogamia."

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

Pennsylvania Horticultural Society.—The autumn meeting the last week in September furnished another excellent exhibition and a marked improvement in the growth of the plants over the culture of a few years ago. In this respect there was the greatest novelty, for there was little that was really new among the plants and flowers themselves.

One of the best improved features is the attention given to labelling, so that the exhibition can be made instructive to the visitors. Several collections had the names neatly written on cards, placed on the tops of slender flower stakes, and high above, that they could be seen without effort on the part of the observer. Many of the exhibits had no exhibitors' names attached—nothing but the exhibition numbers. The names of the exhibitors, we think, give increased interest to these affairs. No. 79 had a very pretty plant of the old Strelitzia regina in flower. Its yellow and blue bird's-head like flowers always please, and it is surprising the plant is not more often seen.

A remarkably fine collection of Lycopodiums, by Eisele Brothers, indicated that pan culture is best for these plants. The plants were about two feet across.

Chas. D. Ball, one of the commendably labelled collections, had a collection of ferns, which were especially worthy of note by their genuine "ferny" tint of color. They were not overgrown, but healthy plants, mostly about two feet high and wide.

The Theif Palm, Phœnecophorium sechellanum, seems growing in favor, as it was in many collections. One of the best was exhibited by No. 59. It had a blade of about 3 feet by 2. In spite of its ferocious-looking spines, it is a very handsome fern. No. 59 had also a very commendable collection of leaf plants in pots and small tubs, among which a Pandanus Veitchii, with its green and white striped leaves, was very much admired.

No. 45 had a beautiful specimen of the Chusan Palm, Chamærops Fortunii. This palm is nearly hardy. The specimen exhibited was very tufty, and one might suppose it was an unique shrub of some kind, instead of being a member of the palm family. Messrs. M. F. Small & Co. had their collection adorned by many crotons, which yet appear to be among the most desirable of leaf plants.

Mr. John M. Hughes, gardener to Mr. Geo. W. Childs, astonished many by the richness of his exhibit. He had a particularly rich specimen of the large Fan Palm, Latania Borbonica. It was about 10 feet high by 15 feet wide, and yet only in a three-feet tub.

The same exhibitor had the best grown Caladiums we ever saw. The leaves were wholly self-supporting, about fifty to a plant, the mass forming a plant two or three feet over. They were in rather large (15-inch) pots.

He had also a very meritorious collection of tuberous Begonias in 10-inch pots, forming specimens about 1 foot over.

Dracænas, as usually seen, are rarely well grown. But David Emery, gardener to Mrs. Charles Dissel, had a nice lot. They were in 12 or 14-inch pots, were about 3 feet high, and with nice healthy foliage from bottom to top.

Palms are so often exhibited in a huge, overgrown condition, that it was pleasant to note a very varied collection in 6 or 10-inch pots from Messrs. T. Small & Co. They were also admirably labeled.

Mr. William Joyce, gardener to Mrs. Matthew Baldwin, had one of the most interesting collections in the room. Among the rarer palms the reporter noticed as a very pretty one Licuala grandis. It is a broad-leaved fan palm, dwarf, and with very slender stipes. A very good specimen of the pretty Pitcher plant, Nepenthes Hookeriana, an admirable specimen of the gorgeous velvety-leaved Sphærogne latifolia, the leaves 2 feet by 15 inches wide, and the rare Anthurium crystalinum. This is an aroid with large, dark velvet green leaves, and prominent light green veins.

Mrs. Anne Bissett made her usual collection of ferns, always welcome as showing how much variety may be had in a small space when good culture in small pots is the plan adopted.

The absence of flowering plants, so often noted of late years in exhibitions where only ferns and foliage plants appear, was well broken on this occasion by the flowering Begonias. Besides those above noted, Mr. H. A. Dreer had a very nice collection. They were in 6 inch pots, about 6 to 12 inches over, blooming profusely and of all shades of color, between yellow and crimson. The Gloxinias also added floral attractions.

Mr. Jamieson, gardener to Mrs. Mason, who has often done good work for the Germantown Horticultural Society, made his first appearance here with a very nice collection of marantas and crotons, and Mr. Alburgur had some nice palms.

Among the cut flowers were some very nice things. Mr. Sturtevant, of Bordentown, added largely to the attractions of the room by water tanks containing leaves of the great Victoria water lily and a large number of Nelumbiums and water lilies. The beautiful red-flowered Nymphæa Devoniana flowers were nearly a foot in diameter.

The Florists' Club had a fac-simile of one of the floral adornments with which the rooms of Mrs. Cleveland were generously decorated during the President's visit to the Constitutional Centennial. Outside of the emblematic lessons to be taught by floral designs, the workmanship was wonderful. No one could tell at a little distance that the United States flag was not actual bunting instead of flowers. The blue corner of the flag was made of violets, tuberoses represented the stars, red and white carnations did duty for the stripes, and Perle roses made the yellow pine flag-staff. We believe the work was done by Pennock Brothers.

There was a remarkably fine collection of cut orchids, in glasses, but no name or number to identify the exhibitor. Near them Mr. E. D. Sturtevant had a collection in which were the pretty rosy purple Rodriguezia secunda, several varieties of Cattleya allied to C. Mossiæ, and the curious Catasetum occidentale, which seems to endeavor to make up by a weird sort of beauty the unpardonable sin in an orchid of lack of fragrance.

There were cut roses of course—no exhibition now is an exhibition without roses. No. 27 had some magnificent American Beauties, and if it is to be regarded as identical with Madame Ferdinand, she ought to be ashamed of herself for neglecting in her younger years to make the favorable impression she certainly makes to-day.

Craig Brothers had some of the rarer ones such as Comptesse de Frigneuse, Bride, and Mad. Cusin, which we have before noted, with the grand old Niphetos among them as good as any. Evans and Battles had Meteor also noted last year. At a little distance one is reminded of the old Louis Philip in color and size. It is said to be a very promising florists' rose.

Mr. Schaffer has a large lot of Belladonna lilies in flower in pots. We suppose they are foreign grown bulbs. We have never known home grown bulbs to flower so beautifully.

Cut border flowers made a better display than usual. Dahlias from Dreer had among them some few good ones not well known. There were Hercules, a crimson and brown; Fanny Purchase, small yellow; Ovid, a plum color; John McKeyne, orange, crimson top, and Vicomte Kermoisin, deep salmon shaded purple. The old Nasturtiums, Cockscombs, French and African Marigolds, Asters, Gaillardias, and Drummond Phloxes were also from the same exhibitor in a wonderfully improved state.

Cacti, we suppose from Mr. Blanc, made a unique appearance. The rat-tail or Cereus flagelliformis grafted on some of the cylindrical species was a good idea.

Fruits were almost absent. Mr. Gebhard Huster, gardener to Miss Hester, had some nice hothouse grapes. A White Nice weighed 7 pounds.

No. 90 had some remarkably fine bunches of Gros Colman and Bowood Muscat. No weights were attached but the former appeared to be about 15 inches long and 9 inches wide—the berries about 1¼ inches in diameter; and the latter about 18 inches by 12, and the berries about 1 inch long.

Gebhard Huster had a nice collection of vegetables in which were nice plants of the recently improved chicory, an excellent salad. A good idea was having his cut vegetables set in shallow trays of water which prevented them withering.

Value of Conventions.—A writer in the *American Florist* makes a good point against those who see no use in going to conventions. They say they learn nothing, and go home feeling they cannot get twelve cents for a ten-cent bouquet any more after their return than before they went. Conventions broaden general intelligence, and if general intelligence does not help a man, we may as well shut up all our schools at once.

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DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXIX. DECEMBER, 1887. NUMBER 348.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

One of the greatest objects of art is to add to the pleasures at our command. In the language of trade, we desire to "work a thing for all it is worth." In gastronomic art, we may pronounce a potato very good, but we take more pleasure out of it under certain circumstances, when we add other articles to it. There are scores of methods, from potato salad to potatoes simply boiled or roasted, that add to the simple pleasure of the tuber itself. There are, however, hundreds of people who do not know how simple and easy it is to get varied pleasures from the simple potato, and just so there are hundreds who do not know how much more enjoyment they may have at small cost out of a little piece of garden ground than they at present enjoy. Landscape garden art, like the gastronomic art, teaches us simply to get out of the raw material "all it is worth."

Side Terrace and Lake, Chismere.

In landscape gardening, the artist has to deal with four leading elements that affect his work—the earth, the air, the sky and the water.

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father was a country clergyman in a poor district in Sweden, and in a location where educational advantages, or even the advantage which cultured society gives, must have been very slim. Messrs. J. P. Englehard & Co., booksellers of Chicago, have recently published an historic account of the early life of the great naturalist, and have obligingly loaned us the annexed engraving of the house in which Linnæus was born.

Thousands of boys have had better chances; and we have no doubt many would look on such a career as that of Linnæus as owing to some good fortune. The fact is, the chance comes to every boy to be distinguished, if he has but the will to take hold of it.

Professor and Mrs. Lemmon.—It has become general to associate these two famous botanist explorers. Professor Gray states that he named the genus Lemmonia in honor of both of them. A California paper says:

> "Prof. Lemmon is well known among botanists and naturalists, and has spent many years in the pursuit of his avocation. He found the home of the common potato away up in the mountain fastnesses of Arizona, and nearly paid for his curiosity by being hunted by the Apaches. The Professor's life has been a checkered one, embracing service in the army during the rebellion, and a term in the awful prison-pen at Andersonville, Georgia, where he endured privations from which he has never fully recovered. He and his worthy wife count their friends by the hundred all up and down the coast, and the writer is proud to be considered among the number."

Charles Darwin.—Charles Robert Darwin, the naturalist, was the second son of Robert Darwin by Susannah Wedgwood, eldest daughter of the celebrated potter, to whom she was married at Marylebone Church in the year 1796. He was born at The Mount, Shrewsbury, February 12, 1809, and died April 19, 1882, aged 73 years, 2 months, and 7 days. To be full of years and rich in honors may in this world suffice as the reward of a well spent life. Charles Darwin was but little benefited by his schooling, his studies of Euclid at Shrewsbury being apparently all he had in the way of early teaching calculated to form the character that now commands reverential admiration. His education was practically his own, as commonly happens with original minds, and his greatness grew out of an early habit of observing and of inwardly comparing and analyzing facts. He was a naturalist by virtue of his love of Nature no less than by his power of generalizing and his keen penetration into the causes of phenomena that by virtue of their familiarity are but rarely questioned, or ever recognized as possible keys to universal knowledge.

Dr. Asa Gray.—Dr. Gray has returned from Europe, and is again hard at work on the Synoptical Flora.

Prof. C. S. Sargent.—The *Revue Horticole's* editor, M. Carriere, is delighted with a visit recently paid him in Paris by Professor Sargent—and speaks in the highest praise of his forthcoming illustrated work *Sylva boreali Americana.*

Dr. Maxwell T. Masters—the eminent botanist and editor of the London *Gardeners' Chronicle* has been elected Vice President of the Linnean Society. He belongs to a race of botanists. Salisbury, after whom the Maiden Hair tree is named, is one of his ancestors.

Luther Burbank's Nurseries.—These nurseries at Santa Rosa, California, are among the most enterprising in America. He is paying attention particularly to the introduction of the olive, having no less than 125,000 plants of one variety alone. This fact will give some idea of the wonderful success of this new branch of fruit growing—the olive, in California.

Haage & Schmidt.—This well known German firm celebrated the twenty-fifth year of the founding of their firm, on August 1st.

J. Eastburn Mitchell.—It is not so long since we had to record the death of Mr. W. L. Schaffer the well known President of the Pennsylvania Horticultural Society, whose magnificent gift through his sister and nephew, Dr. Schaffer, of the great Horticultural Hall in Philadelphia, to the Horticultural Society, is so well known. We now have to record the decease of his successor in the Presidency, Mr. J. Eastburn Mitchell, which occurred at his residence in Logan Square, Philadelphia, on the fifth of October, in the seventieth year of his age.

Mr. Mitchell succeeded to a very profitable business founded by his father as a manufacturer of mill stones, to which many cognate branches were subsequently added. He always had a fondness for gardening, and early in life became a member of the Pennsylvania Horticultural Society, serving faithfully in subsequent years on many varied committees. In 1858 he built a country place on Chestnut Hill near the built-up portion of Philadelphia, on which he had cold graperies, plant houses, a fine amateur collection of fruits, and beautifully laid out grounds, which he enjoyed for several years, till, for family reasons he removed to the city proper.

He was a remarkably public spirited man, and contributed liberally to many associations and causes in which he had no special interest, but simply because of the pride he felt in the good name of the city.

When the great American Centennial was arranged for to be held in Philadelphia, he entered cordially into the effort to make it a grand success, and the writer of this believes that to Mr. Mitchell more than to any other one man, is that city indebted for the magnificent conservatory, erected at that time, and which now is among the leading attractions of Fairmount Park.

At the present time gentlemen of means who take an active part in promoting a love of horticulture in public ways, are not numerous in Philadelphia, and this makes the loss of an active worker like Mr. Mitchell at this time, one the more to be regretted.

Sarah Hoopes.—A famous amateur horticulturist, in this lady, passed away at West Chester, Pa., on the 10th of October, in her ninetieth year. It may not be too much to say that to her in a great measure we owe the famous firm of Hoopes, Brother & Thomas. The love of trees and flowers which took such active form around the homestead on Cherry Hill farm, could not but have an influence on her boys, and out of this grew the Cherry Hill nurseries, established on the grounds when but a young man by the eldest, Josiah, into which subsequently the younger, Abner, grew, and with the immense development of the business, finally George B. Thomas.

Sarah Hoopes, as she always loved to be simply called, was in many respects a remarkable woman. She had an immense power for good over everyone who came in contact with her, and not only the horticultural, but a large number of distinct social interests, have been made to progress rapidly in knowledge and happiness through Sarah Hoopes having lived in this world.

Dr. George Thomas.—Amateur horticulture loses a rare lover of gardening in Dr. George Thomas of Whitford, Chester County, Pa., whose death occurred recently in his eightieth year. He was especially fond of rare trees and shrubs, of which his grounds contained a fine collection.

Though a regularly educated physician, he never practiced, but with abundant means he lived a comparatively retired life, doing good to every one about him with whom he came in contact. When on his death-bed, and in a delirium from which he never recovered, he exclaimed, "Let us go out and plant some trees." These were his last words.

Lindenia.—We have received from Mr. J. Linden, 100 Rue Belliard, Brussels, Belgium, the 2d part of the 3d volume of this beautiful work. It is wholly devoted to orchids, and we find the following in this issue:

> "*Cattleya virginalis,* t. 101.—A Cattleya with pure white perianth-segments and with the disc of the lip of a rich yellow color. It is supposed to be a variety of C. Eldorado, but whatever be its affinity there can be no question of its beauty.
>
> "*Cypripedium præstans,* t. 102.—A handsome Cypripedium recalling C. Stonei, and of which so much has been said in English papers lately that we need only add that the figure now given is a faithful representation of a desirable plant.
>
> "*Aërides Houlletianum,* t. 103.—The flowers of this species have cream-colored segments tipped with lilac, the broad obovate retuse lip has a paler ground color flushed with rich lilac.
>
> "*Catasetum Bungerothii var. Pottsiana,* t. 104.—Scarcely have we had time to settle down after the introduction of this fine plant than we are confronted with a variety in which the upper segments are spotted with purplish-red."

The California Florist.—We understand that arrangements are being made to bring out soon a magazine under this title. Mr. Emory G. Smith, will have a hand in it.

Annual Report of the Forestry Congress—Annual Report of the Division of Forestry of the Department of Agriculture, for 1886. By B. E. Fernow.

These two pamphlets show that there is yet a wide spread interest in the subject of forestry, and much good will follow eventually from the work now being done. Mr. Fernow is throwing himself energetically into the cause, and has got over an immense amount of work. The statistical tables are especially useful and will be for a long time of service as a work of reference. It appears from these reports that though small groups of trees are being set out in large numbers, only a few instances may be cited of forestry planting as a regular business enterprise. The forests set out by Douglas, and by Mr. Fay, seem still about the only forests planted on a scale commensurate with the importance of the work. Commissions and reports on reports from various quarters are abundant. Surely some practical good result must eventually come.

Report of the United States Department of Agriculture for 1886.—It is pleasant to note with each recurrent year, an improvement in this government publication. For, good as they have been of late years, we regard this as the most valuable ever issued. There is a more clear perception that the peculiar mission of the department is to give information that only a government can supply—and that this information should be given with scientific precision and absolute accuracy. We do not want to read over and over again what has appeared in every penny newspaper. Horticulturists generally will turn with some interest to the newly established Department of Pomology. They must remember that the volume closes with 1886 and that the pomologist had little time to study the bearings of the leading matters of interest in the field before him. Yet it is evident that he can make the division as useful as the others, as soon as he has become accustomed to the position.

In these publications which are for all the world and for all time, the incumbents learn to be careful of their statements. We suppose, if written now, after a year's additional experience, the pomologist would not say as he did in 1886, "It is now well proven that the Blackman plum is a hybrid between the peach and the plum, and like many hybrids, is sterile." In the light of modern experience, it would be difficult for the pomologist to name the "many hybrids" that are sterile—for, as in the case of the Blackman plum, the so called "sterile hybrids," are not known to be hybrids, but the fact of sterility has been taken to prove the hybridity, which is just no proof at all.

Neither, we think, would the pomologist now write: "The Japan persimmon is unlike our native species in that its flowers are perfect—that is, have stamens and pistils in one flower—while ours has the two sexes on different trees."

There is really no difference in this respect between the two species. Both are polygamous instead of diœcious and it is not at all uncommon to have trees of our species perfectly hermaphrodite; on the other hand, in their wild condition, the Japan species have the sexes separate as often as ours—and even in the forms that have been selected for cultivation, and are perpetuated by grafting, the flowers are often unisexual. The writer has seen a tree of the variety known as Yanesi, in which no flower could be found with a perfect stamen, though the fact that the tree brought forth two persimmons that year, showed that there may have been at least two flowers perfect.

We mention these points, not so much for the purpose of criticism on an exceedingly valuable report—but to express a hope that by particular accuracy they may be rendered still more valuable.

The Alphabet of Bee Culture.—By A. I. Root, Medina, Ohio. Certainly, we think, the most complete manual ever issued.

Catalogues.—Benard, E., Roses and Nursery, Orleans, France; Berger, H. H., & Co., Japanese Specialties, Alameda, Cal.; Charoze, Alexis, Trees, Shrubs, etc., La Pyramide Trelaize, Angers, France; Close, Oscar, Trees, Plants, etc., Worcester, Mass.; Cranston, John & Co., Roses, Fruit, Ornamental, King's Acre, Eng.; Engle & Bro., Wholesale Circular, Marietta, Pa.; Kelsey Bros., Trees and Shrubs, Highlands, N. C.; Kelsey, Fred. W., Special Collections, N. Y. City; Lambert & Reiter, Plants, Trier, Rheinprussen; Murdoch, John R. & A., Fruit and Ornamental, etc., Pittsburgh, Pa.; Rolker, A. & Sons, Florists' Supplies, N. Y. City; Schmitz, H., Autumn Seeds and Plants, Ghent, Belgium; Smith, Wm. H., Bulbs, Seeds, etc., Philadelphia, Pa.

SCRAPS AND QUERIES.

Lindenia.—"W. L." inquires: "On page 320, October number, you speak of 'Lindenia,' a French work on orchids. Will you be so kind as to inform me whether the text is printed in English as well as French; if so, where it can be obtained?"

Lindenia is a Belgian publication, the text printed wholly in French; but the colored plates are full-sized, and so life-like as to be well worth subscribing for, even though one does not know the language.

We do not know of any agent for the work in this country. The publication office is 52 Rue de Chaume, Ghent, Belgium.

Mr. Halliday Jackson.—The following reminiscences are by Mr. J. F. Clark:

"In the last issue of the Gardeners' Monthly I notice with regret the death of Mr. Halliday Jackson, of Chester county, Pa. In 1874, while then living near West Chester, I was making up a collection of native ferns, to be exhibited in pots at that county fall exhibition.

"Being anxious to have them all correctly named, I was obliged to call on Mr. Jackson to help me out, which he did with pleasure. Although it was quite late in the evening when I arrived at Mr. Jackson's house, he seemed to take great pleasure in showing me volume after volume of his magnificent collection of ferns from all parts of the globe. Mr. Jackson was also kind enough to present me with a specimen from the South, Pteris aquilina var. caudata, which I shall always preserve in grateful remembrance of that venerable botanist and gentleman. Mr. Jackson was then working on the lower orders of Cryptogamia."

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

Pennsylvania Horticultural Society.—The autumn meeting the last week in September furnished another excellent exhibition and a marked improvement in the growth of the plants over the culture of a few years ago. In this respect there was the greatest novelty, for there was little that was really new among the plants and flowers themselves.

One of the best improved features is the attention given to labelling, so that the exhibition can be made instructive to the visitors. Several collections had the names neatly written on cards, placed on the tops of slender flower stakes, and high above, that they could be seen without effort on the part of the observer. Many of the exhibits had no exhibitors' names attached—nothing but the exhibition numbers. The names of the exhibitors, we think, give increased interest to these affairs. No. 79 had a very pretty plant of the old Strelitzia regina in flower. Its yellow and blue bird's-head like flowers always please, and it is surprising the plant is not more often seen.

A remarkably fine collection of Lycopodiums, by Eisele Brothers, indicated that pan culture is best for these plants. The plants were about two feet across.

Chas. D. Ball, one of the commendably labelled collections, had a collection of ferns, which were especially worthy of note by their genuine "ferny" tint of color. They were not overgrown, but healthy plants, mostly about two feet high and wide.

The Theif Palm, Phœnecophorium sechellanum, seems growing in favor, as it was in many collections. One of the best was exhibited by No. 59. It had a blade of about 3 feet by 2. In spite of its ferocious-looking spines, it is a very handsome fern. No. 59 had also a very commendable collection of leaf plants in pots and small tubs, among which a Pandanus Veitchii, with its green and white striped leaves, was very much admired.

No. 45 had a beautiful specimen of the Chusan Palm, Chamærops Fortunii. This palm is nearly hardy. The specimen exhibited was very tufty, and one might suppose it was an unique shrub of some kind, instead of being a member of the palm family. Messrs. M. F. Small & Co. had their collection adorned by many crotons, which yet appear to be among the most desirable of leaf plants.

Mr. John M. Hughes, gardener to Mr. Geo. W. Childs, astonished many by the richness of his exhibit. He had a particularly rich specimen of the large Fan Palm, Latania Borbonica. It was about 10 feet high by 15 feet wide, and yet only in a three-feet tub.

The same exhibitor had the best grown Caladiums we ever saw. The leaves were wholly self-supporting, about fifty to a plant, the mass forming a plant two or three feet over. They were in rather large (15-inch) pots.

He had also a very meritorious collection of tuberous Begonias in 10-inch pots, forming specimens about 1 foot over.

Dracænas, as usually seen, are rarely well grown. But David Emery, gardener to Mrs. Charles Dissel, had a nice lot. They were in 12 or 14-inch pots, were about 3 feet high, and with nice healthy foliage from bottom to top.

Palms are so often exhibited in a huge, overgrown condition, that it was pleasant to note a very varied collection in 6 or 10-inch pots from Messrs. T. Small & Co. They were also admirably labeled.

Mr. William Joyce, gardener to Mrs. Matthew Baldwin, had one of the most interesting collections in the room. Among the rarer palms the reporter noticed as a very pretty one Licuala grandis. It is a broad-leaved fan palm, dwarf, and with very slender stipes. A very good specimen of the pretty Pitcher plant, Nepenthes Hookeriana, an admirable specimen of the gorgeous velvety-leaved Sphærogne latifolia, the leaves 2 feet by 15 inches wide, and the rare Anthurium crystalinum. This is an aroid with large, dark velvet green leaves, and prominent light green veins.

Mrs. Anne Bissett made her usual collection of ferns, always welcome as showing how much variety may be had in a small space when good culture in small pots is the plan adopted.

The absence of flowering plants, so often noted of late years in exhibitions where only ferns and foliage plants appear, was well broken on this occasion by the flowering Begonias. Besides those above noted, Mr. H. A. Dreer had a very nice collection. They were in 6 inch pots, about 6 to 12 inches over, blooming profusely and of all shades of color, between yellow and crimson. The Gloxinias also added floral attractions.

Mr. Jamieson, gardener to Mrs. Mason, who has often done good work for the Germantown Horticultural Society, made his first appearance here with a very nice collection of marantas and crotons, and Mr. Alburgur had some nice palms.

Among the cut flowers were some very nice things. Mr. Sturtevant, of Bordentown, added largely to the attractions of the room by water tanks containing leaves of the great Victoria water lily and a large number of Nelumbiums and water lilies. The beautiful red-flowered Nymphæa Devoniana flowers were nearly a foot in diameter.

The Florists' Club had a fac-simile of one of the floral adornments with which the rooms of Mrs. Cleveland were generously decorated during the President's visit to the Constitutional Centennial. Outside of the emblematic lessons to be taught by floral designs, the workmanship was wonderful. No one could tell at a little distance that the United States flag was not actual bunting instead of flowers. The blue corner of the flag was made of violets, tuberoses represented the stars, red and white carnations did duty for the stripes, and Perle roses made the yellow pine flag-staff. We believe the work was done by Pennock Brothers.

There was a remarkably fine collection of cut orchids, in glasses, but no name or number to identify the exhibitor. Near them Mr. E. D. Sturtevant had a collection in which were the pretty rosy purple Rodriguezia secunda, several varieties of Cattleya allied to C. Mossiæ, and the curious Catasetum occidentale, which seems to endeavor to make up by a weird sort of beauty the unpardonable sin in an orchid of lack of fragrance.

There were cut roses of course—no exhibition now is an exhibition without roses. No. 27 had some magnificent American Beauties, and if it is to be regarded as identical with Madame Ferdinand, she ought to be ashamed of herself for neglecting in her younger years to make the favorable impression she certainly makes to-day.

Craig Brothers had some of the rarer ones such as Comptesse de Frigneuse, Bride, and Mad. Cusin, which we have before noted, with the grand old Niphetos among them as good as any. Evans and Battles had Meteor also noted last year. At a little distance one is reminded of the old Louis Philip in color and size. It is said to be a very promising florists' rose.

Mr. Schaffer has a large lot of Belladonna lilies in flower in pots. We suppose they are foreign grown bulbs. We have never known home grown bulbs to flower so beautifully.

Cut border flowers made a better display than usual. Dahlias from Dreer had among them some few good ones not well known. There were Hercules, a crimson and brown; Fanny Purchase, small yellow; Ovid, a plum color; John McKeyne, orange, crimson top, and Vicomte Kermoisin, deep salmon shaded purple. The old Nasturtiums, Cockscombs, French and African Marigolds, Asters, Gaillardias, and Drummond Phloxes were also from the same exhibitor in a wonderfully improved state.

Cacti, we suppose from Mr. Blanc, made a unique appearance. The rat-tail or Cereus flagelliformis grafted on some of the cylindrical species was a good idea.

Fruits were almost absent. Mr. Gebhard Huster, gardener to Miss Hester, had some nice hothouse grapes. A White Nice weighed 7 pounds.

No. 90 had some remarkably fine bunches of Gros Colman and Bowood Muscat. No weights were attached but the former appeared to be about 15 inches long and 9 inches wide—the berries about 1¼ inches in diameter; and the latter about 18 inches by 12, and the berries about 1 inch long.

Gebhard Huster had a nice collection of vegetables in which were nice plants of the recently improved chicory, an excellent salad. A good idea was having his cut vegetables set in shallow trays of water which prevented them withering.

VALUE OF CONVENTIONS.—A writer in the *American Florist* makes a good point against those who see no use in going to conventions. They say they learn nothing, and go home feeling they cannot get twelve cents for a ten-cent bouquet any more after their return than before they went. Conventions broaden general intelligence, and if general intelligence does not help a man, we may as well shut up all our schools at once.

PREMIUMS FOR HORTICULTURAL PRODUCTS.—Mr. P. J. Berkmans in his annual address, as President of the Georgia Horticultural Society, says the plan of no medals or premium money, has worked admirably so far.

THE
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DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

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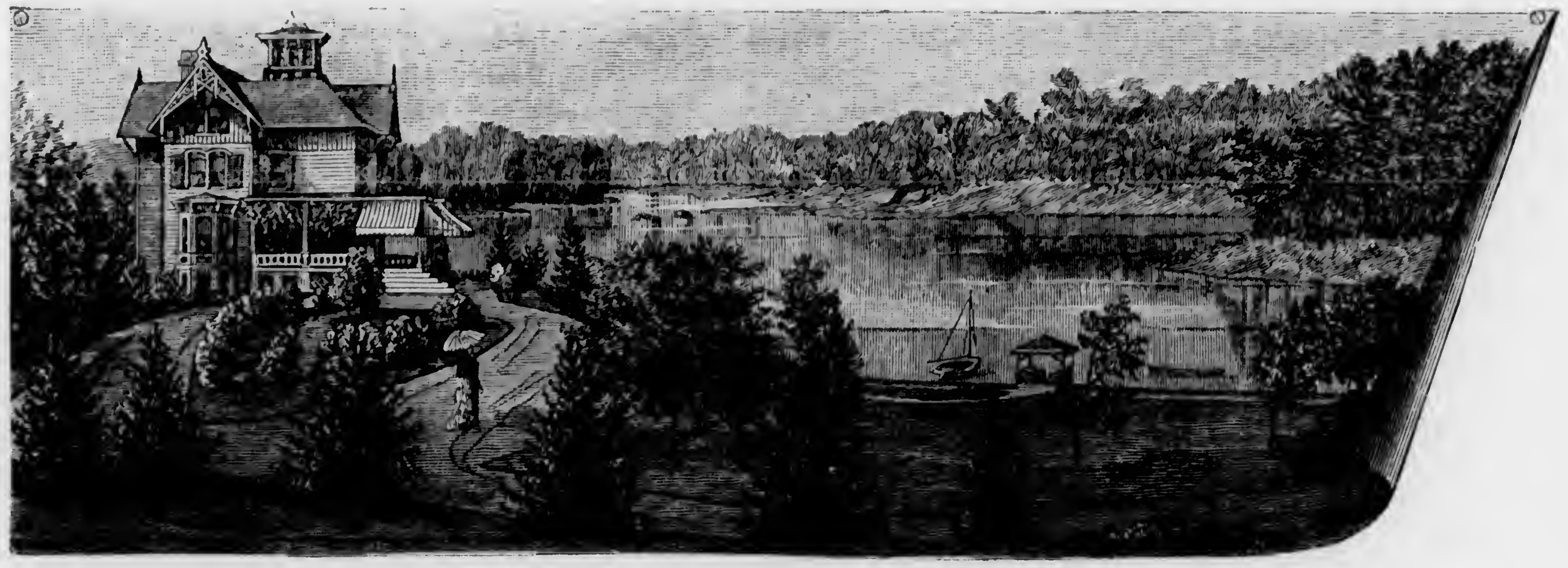
FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

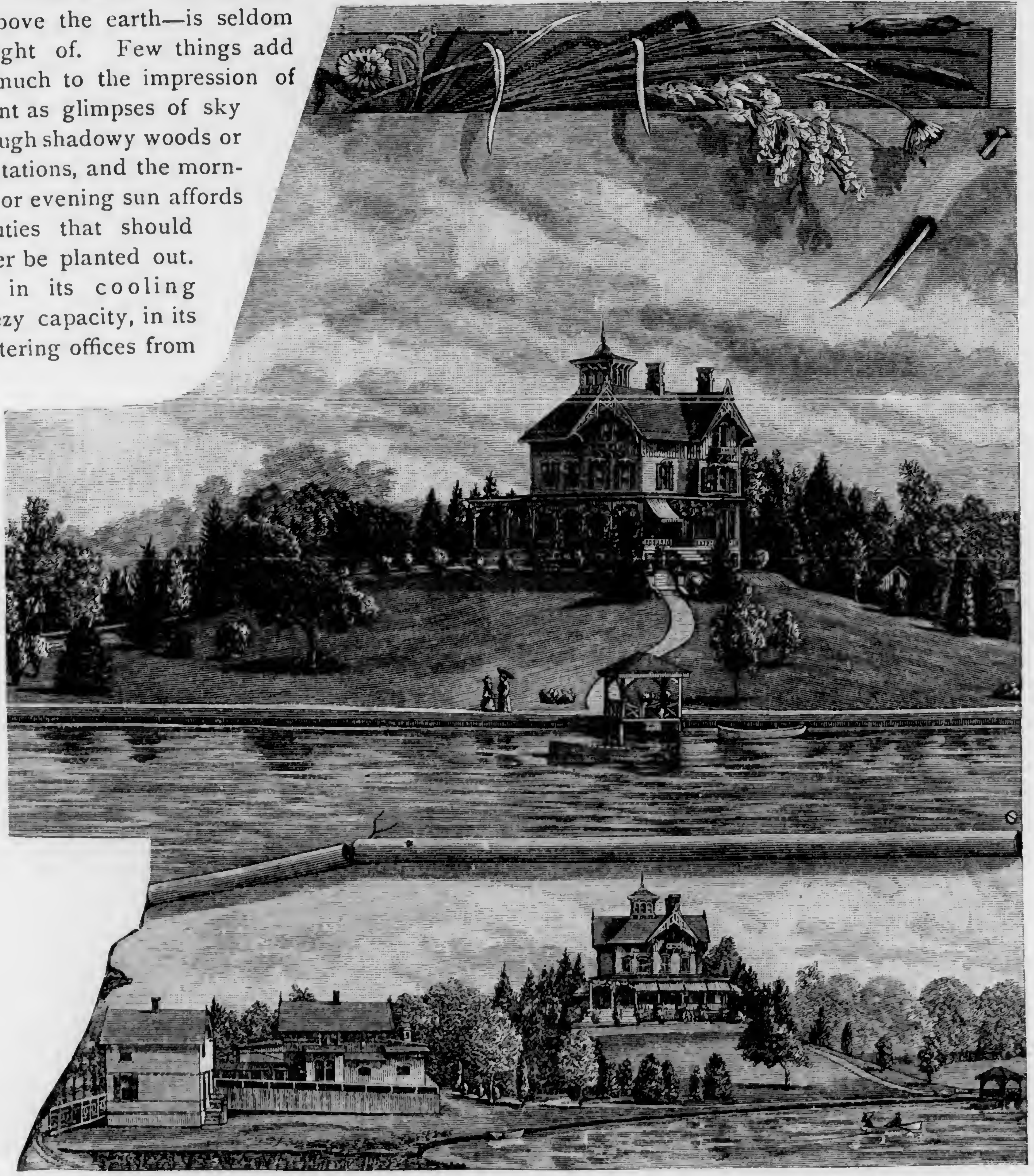
One of the greatest objects of art is to add to the pleasures at our command. In the language of trade, we desire to "work a thing for all it is worth." In gastronomic art, we may pronounce a potato very good, but we take more pleasure out of it under certain circumstances, when we add other articles to it. There are scores of methods, from potato salad to potatoes simply boiled or roasted, that add to the simple pleasure of the tuber itself. There are, however, hundreds of people who do not know how simple and easy it is to get varied pleasures from the simple potato, and just so there are hundreds who do not know how much more enjoyment they may have at small cost out of a little piece of garden ground than they at present enjoy. Landscape garden art, like the gastronomic art, teaches us simply to get out of the raw material "all it is worth."



Side Terrace and Lake, Chismere.

In landscape gardening, the artist has to deal with four leading elements that affect his work—the earth, the air, the sky and the water.

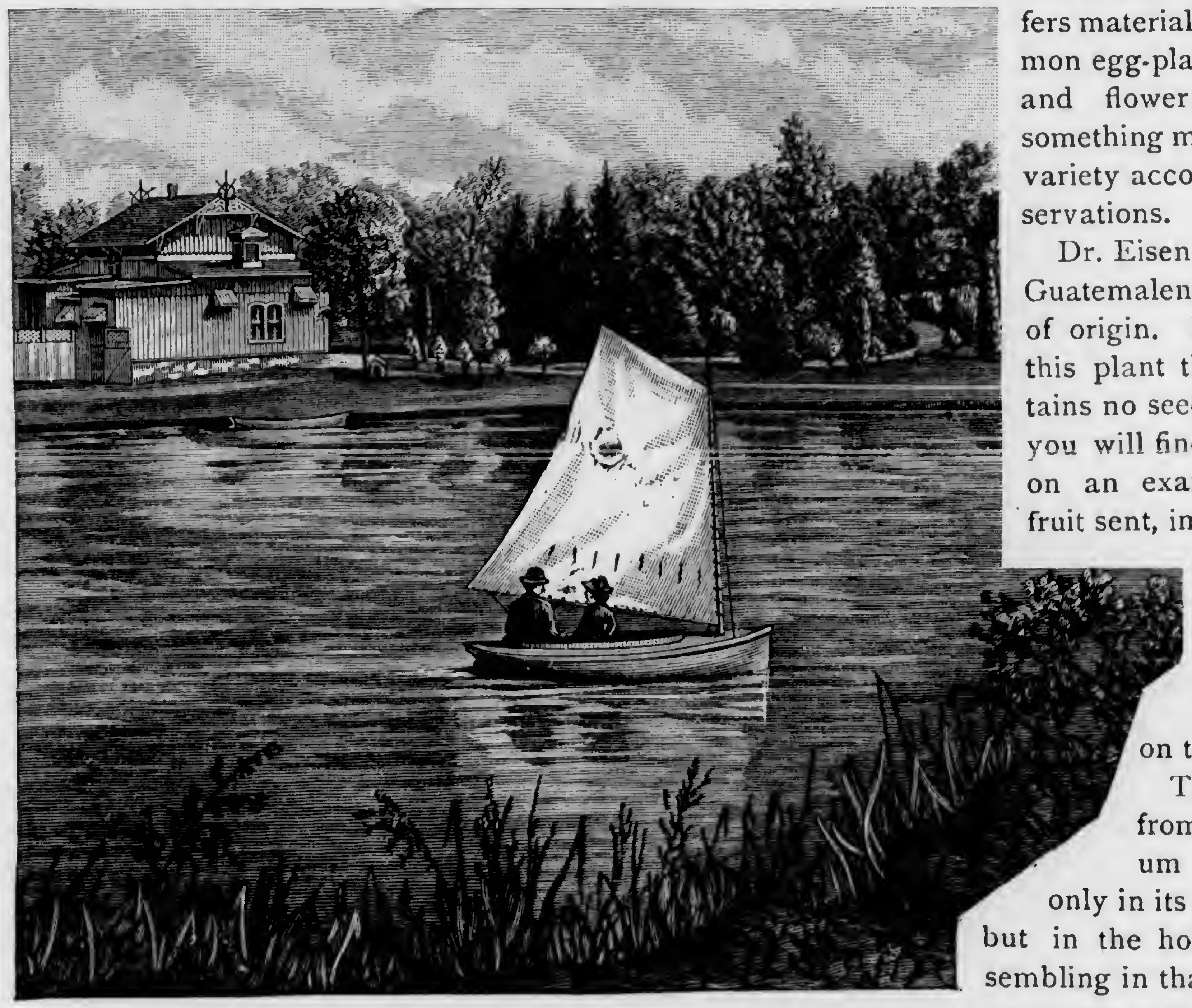
The good landscape gardener never forgets these divisions in his arrangements. It is not always that he can get them all at command, but he is happy when he does. Usually little is thought of but the ground. It is graded, planted and roads led over it, and it may have some architectural ornamentation thrown in. But planting with regard to the air—or that which is above the earth—is seldom thought of. Few things add so much to the impression of extent as glimpses of sky through shadowy woods or plantations, and the morning or evening sun affords beauties that should never be planted out. Air in its cooling breezy capacity, in its sheltering offices from rude winds, in its influence on health in so many aspects, is of commanding consideration.



Chismere on the Hudson: Residence of Alex. Taylor, Esq.

Water, when use can be made of it in landscape gardening, is possibly one of the greatest attractions to a country home, and can be made a tender to the most charming effects when under the control of a master hand. A fountain, a pool, even a little rill through a fern garden, will make a spot almost barren of other charms seem almost a paradise. When a river or lake can be had there is no end to the pleasure a country home can give.

It is not often that we can point our readers to illustrations where all these varied elements in landscape gardening can be happily combined. But we give to-day a series of sketches from the grounds of Chismere, on the Hudson, the country residence of Alex. Taylor, Esq. It is enough to bring tears to the eyes of the enthusiastic landscape gardener, that it is only at rare intervals in his life can he get a free use of the best material in his art to deal with; and envy to those who have money to spend on garden art that they can so seldom find such beauty spots on which the artists in gardening can show their skill.



Lake at Chismere.

COMMUNICATIONS.

THE PEPINO OR MELON PEAR.

BY D.

Accompanying this you will receive, by mail, two specimens of the fruit of the Pepino or Melon Pear, grown on my place at Point Pleasant, N. J., from plants received last spring from Dr. Gustave Eisen, of Fresno, Cal.—who discovered this plant in Guatemala, Central America, and introduced it.

The samples, I regret to say, are neither ripe nor fully grown, though the plants grew finely and and blossomed most abundantly all summer—the flower resembling closely that of the potato.

But from some cause unknown to me, the fruit failed to "set" until very recently; too late I fear to ripen properly, and then only about two pears to each plant, among literally hundreds of blossoms.

The *Orchard and Garden* of this month mentions having grown this plant during the past summer on their trial grounds at Little Silver, but failed to set any fruit whatever, but why the *O. and G.* calls it Solanum Melongena I do not understand. The plant differs materially from the common egg-plant, in leaf, fruit and flower—a difference something more than that of variety according to my observations.

Dr. Eisen calls it Solanum Guatemalense, from its place of origin. It is claimed for this plant that its fruit contains no seed. This I think you will find to be the case on an examination of the fruit sent, immature as they are—this anomaly I don't understand, but look to you for some remarks on the subject.

The fruit differs from that of Solanum Melongena not only in its absence of seed, but in the hollow centre, resembling in that particular the common cantaloupe, which it is said to resemble also in flavor. Benson, of Swanwick, Ill., who advertises the Melon pear in his catalogue, says the plants can be wintered safely in a dry, warm cellar like potatoes, dahlias, &c., or if properly protected can remain in the ground.

I shall try both ways. Fearing frost a few days ago I had one half of the plants dug up and stored in a cold pit—the others I propose letting remain in ground with proper protection. Should either or both survive, will give them another trial next season. Should no heavy frost intervene for a fortnight, it is possible some of this fruit may ripen even yet—in that event you may hear from me again.

[We suppose it has been regarded as a variety of the egg-plant, Solanum Melongena, through the statement of some of those who first sent it out. Plants sent us by Dr. Eisen in the spring, as well as this note from our correspondent, show that it is quite a distinct species.

Mr. Sereno Watson, of Cambridge, Mass., has been working up the plants of Guatemela. It would be best for those who have good specimens to send them to him, so as to get the exact name.

Many plants perfect their pistils before the stamens are mature, and hence depend for pollen for fertilization from other flowers. Only the later flowers bear fruit. It may be the case here.

Then many plants, as the Banana and Osage orange, will perfect the fleshy part of the fruit without any fertilization at all, though seeds are not produced, and this also may be the case with the Solanum,—and again, after fertilization, there is some difficulty in the power of nutrition, and the ovaries, though fertilized, abort. Just what is the case here, can only be told by careful observation.

The plant evidently requires a long warm season to perfect itself. We fancy in those localities where it has a good chance it will be an admirable plant, and Dr. Eisen deserves much credit for introducing it.—Ed. G. M.]

ROSES IN THE OPEN GROUND.

BY JOHN L. H. FRANK.

Your remarks on page 264 of the September number of the GARDENERS' MONTHLY, that roses are killed in winter by the drying out of moisture, which cold often causes, is quite valuable to me. I have heretofore carefully kept my tender roses dry so as to keep them from rotting in the ground. I believe that I have heretofore overdone the thing by keeping them too dry.

We know how much superior—as a bloomer—is a rose that has stood in the ground without disturbance for one or more years, to one that is transplanted every year. This is the case with a rose that is taken up in the fall, heeled in, protected against frost through the winter and again planted in the spring. A plant kept safely through the winter, root and branch in the open ground, is worth, in my opinion, four times as much as one of the same size planted in spring.

If, therefore, a method could be devised by which tender roses could be safely kept through winter even at a considerable expense, provided they required no time, no attention through winter, it would be very valuable. Roses are a pleasure to me when cultivated by myself—my profession keeps me away from home during the day excepting for dinner. I would, therefore, have no time to take care of a greenhouse or pit that required daily attention, by reason of the short days in winter. I will try the frames (cold pits) recommended by your correspondent in the last August number of the MONTHLY.

To your correspondent "B" (in September MONTHLY) I will say that I have experimented in keeping the roses named excepting Namenlose Schöne through winter with a covering of dry leaves and boards over them to keep off the snow and water.

Am. Beauty and Pierre Guillot would probably live through winter without protection. Perle de Jardins, Sunsets and others keep alive when protected, but their tops freeze back and it takes a long time before they bloom in the summer or fall. Repeated freezing back to the ground for a number of successive winters so weakens their constitution that they finally die. The Bride was dead, root and branch, and cannot with ordinary protection be kept out of doors over winter.

I have not yet tried to keep the Namenlose Schöne out of doors in the open ground through winter, but from its appearance it seems more tender than the Bride and I would no more think of trying to keep it out of doors through winter by ordinary protection than the Niphetos.

When I got my Namenlose Schöne last spring it had two buds which developed into two beautiful roses; none that appeared since do at all compare in beauty to the first two. Our summer having been very hot and dry may to some extent account for the defective development of roses since.

The first Namenlose Schöne rose that I cut off, I inserted into a bottle filled with water in which there had been crimson ink. There was enough ink left to color the water; the rose gradually became crimson—the veins first seemed to fill which looked like veins of blood in the human body—finally the whole rose turned red. When the rose was suffused with crimson it was remarkably beautiful. The other roses have not turned crimson. The rose in question must have been turned crimson by the ink contained in the water.

The bud is roundish and cream colored with crimson blotches on the outside petals, similar to those on the Bride.

The Bride is a much stronger grower than the Namenlose Schöne—has oblong buds and is a great bloomer.

I find it of advantage to lay down all my roses in early winter and cover them with leaves and cornstalks—even the Queen of the Prairies and Baltimore Belle I lay down with decided advantage, particularly to the latter.

We have had winters here that killed down to the ground all my Hybrid Perpetual roses with one or two exceptions, when they were not bent down. Bending down to the ground with the slightest covering will keep most Remontant roses sound and perfect in all their parts through winter.

Dayton, Ohio.

TO FREE ROSES FROM SLUGS.

BY ANNA GRISCOM.

While visiting the garden of my friend, Mrs. R———, this September (1887), my admiration was called forth by her remarkably fine roses, many of which were blooming vigorously. I asked her how she had kept them in such good condition. She told me that in the spring, just after the leaves were formed, she had syringed them well with suds made of whale-oil soap. She was careful to throw this upward so as to strike the under surface of the leaves. After once commencing to bloom, they had continued all summer, and not a slug was to be seen upon them. While in the C. E. Cemetery, not far distant, where there are many roses, none were to be seen without skeletonized leaves, or suffering in some way from the slugs.

As this prevention is so easy to accomplish, one thorough syringing answering, it is well to make known Mrs. R.'s experience to those who have not tried this method.

Reading, Pa.

THREE GOOD HARDY BORDER PLANTS.

BY M. H. LESTER.

Anemone Japonica comes first in order of merit, and a finer thing can scarcely be imagined than this most beautiful of herbaceous plants. They have tall branching flower stems, 2½ to 3 feet high, and commence to bloom about the time spring flowers are done and last until frost. They seem to do best in light rich soil and ought not to be removed or transplanted any oftener than becomes absolutely necessary. Usually enough leaves are collected or blown around the stocks in the fall to protect them during the winter in very cold or exposed situations where they need any. There are three varieties, respectively, alba, rosea and elegans. I like the white flowered variety best, but all are good and should be in every collection.

The next is Helianthus multiflorus plenus, double perennial Sunflower. This rare old beauty gives universal satisfaction and any soil seems to suit it. The plant grows about 4 feet high, and commences to bloom about the last of July, bearing many beautiful orange colored flowers as large as dahlias, and continuing in bloom until frost.

The third is Platycodon grandiflora. This is one of the Bell-worts, and a very beautiful thing it is. The plant grows about 2 feet high, and is covered with its lovely blue flowers from mid-summer until cut down by frost. There is also a white variety identical with the above except in color.

These three plants have come under my notice at the Botanic Garden here the past season, and I trust this notice may have the effect of extending their cultivation, as they are not near so often met with as they deserve to be. *Washington, D. C.*

[The white variety of Platycodon is becoming popular with cut flower dealers for summer work.—Ed. G. M.]

EDITORIAL NOTES.

THE BEDDING SYSTEM.—Mrs. Schuyler Van Rensselaer, in the *Independent*, has a vigorous article against the bedding system, which for the last quarter of a century has been a rage. Empty flower beds in spring, empty beds in early summer, empty beds all winter, she thinks poor compensation for a month or two of lively foliage made to look like a bad carpet. And the cost! 450 000 plants, she says, go for this few weeks' pleasure in the Boston twenty-four-acre public garden.

THE MYROBALAN PLUM.—This is getting some reputation in the old world as a hedge plant. They call them Myrobella hedges.

PRUNUS PISSARDI.—In excuse for giving this garden variety a Latin specific name, it is said that M. Carriere, of Paris, believed it to be a species on the representation that it was found wild at Taurus, a Persian town about 230 miles from Teheran. He has since fruited it, and seedlings show it to be only a purple variety of the Myrobalan plum, as has already been noted in this magazine. The Purple-leaved Myrobalan plum, will be the best garden name for it.

PERSIAN PEACH.—Because it happened that Mr. Pissard happened to be gardener to the Shah of Persia, and found a purple-leaved Myrobalan plum among green-leaved ones, is no reason why western nurserymen should call Prunus Pissardi the Persian plum. A Hybrid Perpetual rose has now been called Rosa Pissardi, and perhaps we shall have this dubbed the Persian rose.

THE GOLDEN LARCH.—This Asiatic species, Larix Kæmpferi, is getting popular in Europe.

HYBRID RHODODENDRON.—It has been said that the common Mountain laurel, Rhododendron maximum, has not been used as a parent in producing the beautiful hybrids that adorn our gardens. The very pretty and very hardy kind, known as the Queen, looks as if it might have some of the Maximum constitution in it, and besides this appearance it flowers later than most others, bridging the period of flowering nicely between the two.

VALUE OF TUBEROSES.—It is said that first-class tuberoses which once sold readily for $20 per 1000, now bring in the south only $5. A few extra ones may bring $6 or $7.

THE JAPAN UMBRELLA PINE.—A correspondent of the *Garten Zietung* communicates some particulars of a specimen of this singular and distinct conifer that is growing in the garden of Max Daniel Wolterbeek, Valkenburg, near Arnheim, in Holland. It was planted where it now stands, in a very exposed situation, twenty years ago, and is a healthy and beautifully formed tree. Moreover, it has never suffered in the least from frost or other climatal influences. Of pyramidal shape, it is nearly 13 feet high, with a circumference of a little over 21 feet. Last year—or rather the year before last now—it bore for the first time two ripe cones, and the seed produced fifteen seedlings. Last summer it bore only one ripe cone. Many other handsome conifers exist in the select collection at Valkenburg. The soil is sand and peat.

BERGAMOT FLOWERS.—For those who want to have at the same time beautiful border flowers that will easily take care of themselves, and flowers that are very attractive to the bees, there is nothing better than the different kinds of bergamot, or, as we should say, Monarda. First there is an early and dwarf kind of Monarda fistulosa, known as M. mollis. By the time this is over the scarlet M. didyma comes in ; it has several pretty varieties. In July to the 1st of August, the real old-fashioned bergamot, M. fistulosa, comes in. So that for over two months these will give a succession of bee-food and beauty.

HOLLYHOCK CULTURE.—It seems now to be generally admitted that the fungus that seized on the Hollyhock and for a time swept it out of English and American gardens followed impious methods of propagation. It was the same scurvy treatment of the grape-vine which, nearly a quarter of a century ago, sent a death-chill through grape culture over this continent.

MADEIRA VINE.—Amid the many candidates for summer vines, we must not lose sight of the good old Madeira vine, Boussingaultia baselloides. The tuberous roots are easily kept over winter, dry, safe from frost.

NOXIOUS PROPERTIES OF THE LABURNUM.—It has long been known that this very beautiful small tree has properties occasionally noxious to cattle. Other allied species are said to be equally blameable. We hear no complaints, however, though the plant is rather common in gardens.

SOPHORA JAPONICA.—This tree, better known in America under its pendulous form, makes a very noble tree when fully developed. The whitish yellow flowers are in racemes like those of the locust. We have seen flowering trees in the vicinity of Rochester, Bethlehem, Philadelphia, and other parts of the Union, but we do not know who has the finest specimen.

The finest specimen in Europe, M. Andre says, is probably at the village of Villennes, on the borders of the Seine, near Poissy. This was planted in 1795. It is in the middle of the public park there. The head has a spread of one hundred and thirty-three feet, and is of a proportional height. The trunk has a circumference 13¼ feet. So far as we can remember the American specimens referred to would be about four feet in circumference.

THE TUBEROSE IN SOUTH AFRICA.—A correspondent from Natal tells the *Gardeners' Chronicle* :

"For several years Tuberose bulbs, in number a few hundred, were simply cultivated, not propagated, their possibilities unthought of. About five years since, however, they were taken in hand, and a different culture began. Instead of the bulbs being allowed to occupy the same ground year after year without transplanting or division of any kind, they were regularly lifted about June, growth being then at a halt, the offsets taken off, and replanted the following spring (September).

"I shall describe the method followed in a ten acre field, which is daily under my notice. In October last year, the dry grass having being burnt off, the ground—perfectly virgin soil—was broken up with a large American plough drawn by twelve oxen ; the few large boulders lying about were removed. For a first crop Mealies (Maize) were sown broadcast and harrowed in. The next thing was to get the field enclosed with a good bank and ditch and barbed-wire fence. Owing to a press of work the Mealies grew up untouched by hoe or

cultivator of any kind, yet, thanks to the good season, an average crop of fair-sized cobs was gathered last April.

"As is generally the custom here, during the winter, the cattle were turned in to feed off the cornstalks. In August last all was burnt that would burn, and the ground thoroughly ploughed, cross-ploughed, and harrowed twice, grass and Mealie roots gathered and burnt. The soil being in a fine friable condition, furrows were struck out two feet apart with a small iron plough and a couple of horses, a simple marking-machine drawn up and down the drills, and the sets planted six inches apart, and hoed in. Weeds are very carefully kept down, and with our heavy summer rains the growth of the plant is rapid. About midsummer (December) the splendid spikes of bloom expand, and continue till mid-winter (June); indeed, in this locality, 2800 feet above the sea, I am convinced that, with a little management in planting successional batches, they could be had in flower in the open ground throughout the year. For so little frost have we, that tomatoes generally continue to ripen fruit in the open through the winter ; when in Maritzburg, about 200 feet below us, they are invariably killed by the cold. Cannot the Tuberose be flowered in the open—at least in the south of England ? I venture to ask your readers to try. The climate of this colony is particularly well suited for the cultivation of bulbous-rooted plants—a hot, moist summer, followed by a dry, cool winter ; and, I will add, this locality is favored above many others for Tuberose culture. We miss the winter rains of the coast, and escape the up-country hailstorms. A rough estimate gives about fifty acres under Tuberoses in this colony, and the number of bulbs now in the ground nearly 3,000,000."

ORNAMENTAL BIRCHES.—The birches deserve more attention than they have received. The black birch, in open ground, forms a stately, round-headed tree and its numerous slender, finely divided branches, sometimes drooping, lend gracefulness to its aspect. Upon the borders of a pond or by a brook it is a charming tree, its spray often touching the water.

The yellow birch rarely has the opportunity of development in the open ground, but, left to itself, it is a tree which limbs low, sending out a large number of long lithe branches, forming a semi-orbicular head of imposing dimensions. A tree known to the essayist, which came up from a crevice in a ledge of rock, in time threw out huge surface roots which grappled the rock with a titanic hold, until having fed from soil which they finally reached, it grew to a spread of fifty feet, forming in summer a huge mound of foilage, and in the ice storms of winter a crown of sparkling, dazzling beauty, which even in his boyhood he looked upon with admiring wonder. This tree was cut down for a cord of wood !

The paper white birch or canoe birch reaches its fullest development farther north than Massachusetts. Yet in the cooler hill regions of the State it is a fine tree, and if planted will grow well even much farther south. In the open ground it develops a stately head, broadly oval in outline, with rich dark green foliage. But its characteristic beauty is seen in the forest or mingled with a thicket of other trees. There it shoots up with a straight, slender, milky-white stem, without a limb until it overtops its companions of other kinds with its thick-leaved top, one of the neatest, most graceful trees of the New England woods. It has been fitly termed "The lady of the forest." For tree grouping it is one of the best.

The red birch is rare in Massachusetts, yet, numbers of them are found upon the river banks for several miles above and below Lowell. This tree when fully developed is conspicuous for its large dense head, formed by long, slender, somewhat drooping branches, a fringe-like spray often crowding the larger limbs near the trunk. It is also noticeable for its copper-colored bark, the outer layers, upon the limbs and upon the trunks, not too old, hanging loosely in long rugged strips. Alone or among others it is a striking tree, and one of the best for growth by quick-flowing streams, serving at once to hold their banks and to add beauty to the scene. The wood is also valuable.

The little gray birch, commonly called white birch, is associated with barrenness, poverty and neglect. Yet its fastigiate style of branching, its jaunty catkins in early spring, twirling like things alive, and the notable beauty of its foliage in summer, should recommend it to our favorable regard. If we had to purchase it as a foreign tree we should esteem it a fine acquisition for the tree border or the lawn. Certainly it is one of Nature's restorers of worn-out land, and a valuable protective nurse for other seedlings.

The birches deserve the attention of tree-growers, whether planting in masses for fuel and timber or for scenic effect. A well arranged group of our native birches would be a delight to any lover of trees, and planted singly, in open grounds, they are all attractive.

[Read before the Massachusetts Horticultural Society by Levi W. Russell.]

NEW OR RARE PLANTS.

IMPROVEMENT IN THE CHINA ASTER.—The Germans, who have done so much to improve these flowers, that they have come to be better known as German Asters than under their own name, continue their useful work in that line. Every year brings us some successful effort in wholly new lines. A few years ago, we had a race of floriferous dwarfs introduced It is being continually re-inforced by additional forms, among which is the Triumph Aster, of which we have the following description from Haage & Schmidt:

"*Triumph Aster, deep scarlet.*—This novelty is undoubtedly the most beautiful and most perfect of all dwarf-Asters, not only concerning the habit of the plants, but also relative to the form and beauty of the flowers. It forms an entirely new class, reproducing itself true from seed and attains a height of but 7 to 8 inches. At the time when it shows its buds it resembles in habit somewhat the Dwarf Chrysanthemum Aster, but in developing its large, handsome and beautifully shaped flowers it assumes quite another aspect. The flowers bend, on account of their weight, a little at varying angles, but do not droop so as to impair their beauty, each plant forming an elegant bouquet of itself, as may best be seen by the annexed illustration which is accurately engraved from a painting we had made of a medium sized plant. The individual flowers measure from 2½ to 3 inches across and are of the most faultless Pæony-form, all petals being beautifully incurved.

Comet Aster.

The color is peculiarly rich and brilliant, when beginning to bloom it is a pure scarlet, but when in full bloom it changes to a magnificent satiny deep scarlet, presenting thus with these two brilliant colors a lovely sight. It produces its flowers in great abundance, each plant bears at least thirty to forty flowers of exquisite beauty. This novelty, while it was in full bloom, attracted great attention of all visitors to our gardens and was pronounced by all to be the most perfect and most charming of all dwarf Asters cultivated up to this day. As it does not produce a single tall plant it is well adapted for borders, groups, carpet-bedding or for pot culture."

Triumph Aster.

The large class also has been so far improved as to be striped somewhat as the well known Comet Marigold is marked, and which has been selected for the name of the new race. Introducing a new shade in this race, the same firm says of it:

"*Comet Aster, deep rose.*—Pure deep rose flowered variety of the new tribe introduced by us last season, with very large and extremely double flowers similar in shape to the Japanese Chrysanthemum."

Rose, Crown Princess Victoria.—This is a strong growing, yellowish white Bourbon rose, that is attracting a great deal of attention in Germany.

Zebra Zinnias.—A strain of Zinnias with striped florets, was exhibited by Mr. L. W. Goodell, at the meeting on September 3d, of the Massachusetts Horticultural Society.

SCRAPS AND QUERIES.

Landscape Lawn Cemeteries.—Dr. L. C. Diedrickson, Aarhus, Denmark, writes: "I have noticed with great interest what has occasionally come to my knowledge about the landscape lawn system for cemeteries in America. Wishing for more information upon this interesting subject, I beg to put the query: Are there any detailed plans or descriptions published of the 'Spring Grove,' or any other cemetery in the United States distinguished by a high style of art in the way of landscape gardening? If so, where are such plans or descriptions to be obtained?

"If nothing of the kind exists I beg leave to suggest, if you do not believe it would be gladly hailed by many of your readers if, under the head of 'Hints on Tasteful Landscape Gardening,' you were to impart some information on this very interesting subject. Hoping you will kindly pardon my above queries and suggestion, I have the honor to sign myself."

[In the various reports of Spring Grove Cemetery published, there is much given that would suit the wants of our correspondent. The cemetery owes much of its great beauty to the encouragement given by Henry Probasco, Esq., the well known public spirited citizen of Cincinnati, and we are quite sure he would have great pleasure in sending any that may still be on hand, to parties desiring to profit by what has been so well done there.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

TUBEROUS ROOTED BEGONIAS AS FALL DECORATIVE PLANTS.

BY CULTIVATOR.

Few things will reward the cultivator with better results for the labor bestowed upon them, than the above. Their usefulness as fall decorative subjects for the conservatory is unsurpassed. From a packet of seed obtained from Messrs. Laing & Sons, of London, England, and sown at the beginning of last March, we have at the time of writing a grand display of the most gorgeous colors, ranging from the most dazzling scarlet down to pure white, some of the flowers measuring from 3 to 4 inches in diameter. Two parts leaf mould (put through a ¼-inch sieve) to one of sand, is a capital compost in which to sow the seed. We use 6-inch pots, three parts filled with crocks, to insure perfect drainage, which is a matter of paramount importance, as they are very impatient of the least excess of moisture. Fill to within ½-inch of the top with the compost, pressing it gently. Give a gentle watering with a fine rose watering pot, after which sow the seed. A slight dash of fine clean sand can then be thrown over the seed, but this must be very slight. Place, if possible, in a gentle bottom heat with an atmospheric temperature of about 65°. Cover the pots with a pane of glass, over which put a sheet of paper to exclude the light until germination commences, when it must be removed, as they must have all the light possible, shading only from strong sunshine. They must be pricked out when very small. This is a very delicate operation, and must be performed with the greatest of care. Use very shallow boxes for the purpose, filled with the same compost as that in which they were sown. They must be carefully shaded and watered; any neglect of either, if only for a very short time, may prove fatal to them in their young state. For although they are of very robust habit after they once get established into 4 or 5-inch pots, yet in their young state I know of few things that require more care and vigilance, on the part of the cultivator. In about four weeks from the time in which they were transferred to boxes, they will be ready to pot off into very small pots, using equal parts of loam and leaf mould, with a liberal amount of sand. They must afterward be potted on as required, giving small shifts in preference to large ones, using light rich soil, with as much fibre as possible, and being careful to have the pots well drained. About the end of May ours were removed outside and placed on the north side of a high wall where the sun only shone upon them for a short time early in the morning and late in the afternoon. By the middle of August they reached 5 and 6-inch pots; when the cooler dewy nights of September arrived they made rapid progress and were housed the first of October, where they are now in full beauty and likely to continue so until late in November.

South Virginia, Oct. 17th, 1887.

EDITORIAL NOTES.

DAFFODILS.—The named varieties of Daffodils now exceed 500 in some famous European catalogues. They are divided into separate classes like Chrysanthemums, Tulips, or other florists' flowers.

CARNATION, SOUVENIR DE MALMAISON.—For ten or a dozen years past this has continued to be the leading variety grown by leading European florists. It is a very large flesh color, but not near floriferous enough to satisfy American profits.

COCKSCOMBS.—Thirty-four inches from tip to tip is the size of some prize flowers at an English show.

CALIFORNIA CUT FLOWERS.—Whether flowers can be successfully shipped east or not may be a question, but it is evident the Pacific men have faith in it. The Southern California Floral Company, with a capital of $100,000, has just been incorporated. Mr. Emory C. Smith is General Manager.

ACHIMENES.—We have seen the present season the various kinds of Achimenes employed in boxes for window gardening and in vases, and they thrive admirably except in a very hot and sunny place. They should be more generally used.

GERANIUMS AT THE MASSACHUSETTS HORTICULTURAL SOCIETY.—This society is very well patronized by contributors. At the meeting of Sept. 10th there were no less than thirty-eight entries for competition in Geraniums alone. This was in response to a premium offered to children and young people for specimens of window culture.

BEAUTY OF GLAZEWOOD ROSE.—This rose, being a sport, does not always retain its true character, but when it is in its own dress is handsome enough. Arthur Robinson in *Revue de l'Horticulture Belge* for July, has a strong article in its praise. He regards it as one of the very best climbing roses outside of the perpetual blooming class.

PURITAN ROSE.—Mr. Wm. Paul explains that the French are in error in attributing the naming of this rose to the celebrated yacht of that name, but like that yacht, had its name suggested by the "Puritan fathers of American history."

A MONSTER DOUBLE WHITE CAMELLIA.—In the gardens of G. F. Lyndon, Esq., The Henburys, Mosely, Birmingham, there is a very fine double white Camellia, 17 ft. high and 17 ft. through, in the best of health, and a well-furnished symmetrical specimen, from which 4,000 flowers were taken this year. The tree is in a greenhouse devoted almost entirely to it, and is growing in a large square box, 7 ft. square and 3 ft. deep, and stands on a revolving axis of iron-work, so that the plant can be turned round at pleasure. Mr. Bluck, the gardener, states that he keeps the tree liberally syringed and well supplied with water, using liquid manure also. For some years this Camellia has borne a local reputation for its size and the great number of flowers annually produced. It would be interesting to know if there are many other Camellias under glass, and growing in England, which will compare with this plant in size and form. Some of your readers may be able to give some information.—*D. in Gardening World.*

WREATH MAKING.—The *Journal of Horticulture* says:

"The first step after having decided the required size of the wreath when completed will be to form a circle, which is most frequently used, and for which I have adopted the name of "skeleton." These skeletons are very deceptive, and it is one of the commonest errors with the uninitiated to make these much too large, and if the supply of flowers be somewhat scant the wreath in turn will present a very lean appearance. With a view of overcoming this I will briefly cite one or two examples. Presuming, then, that a wreath when complete is required to be about 12 inches in diameter, the size of the skeleton on which to build it should not exceed 6 inches in diameter when flowers such as Chrysanthemums and Camellias are in season, but which may be increased to 7 or 8 inches when choice flowers, as double Primulas, Bouvardias, Roman Hyacinths, and Lily of the Valley, are employed. The diameter of the first-named may be a surprise to many; it is, however, fully justified by experience, and is more readily understood if the breadth of a very ordinary Chrysanthemum, Camellia, or Eucharis be taken into account; with a moderate-sized flower of either of these, and some smaller sprays to furnish the sides, and with Fern fringing the inner and outer margins, it will be seen how easily the size may be increased twofold. My idea of a full-sized wreath when finished and ready for use is 15 or 16 inches in diameter (above that size I term them specials), and for this size a skeleton of 9 inches diameter will be ample.

"Having shown, then, something of how the size may be gauged, we must now construct the skeleton, and for this purpose galvanized iron wire will be found to answer well. Having got this into shape and of required size, next secure a hazel or willow to it and round the interior. This will prevent the wire revolving in the hands of the operator, and which frequently misplaces a flower or two, thereby causing inconvenience and annoyance. Having secured the hazel or willow to the wire, some fresh green moss should be bound tightly over it with small twine, which when finished should be slightly flattened. When this is done a firm surface about an inch wide will be the result, and all will be ready for placing the flowers. There are several other ways of preparing these skeletons, some binding them with cotton wool, which I object to, on the ground of a green base for the flowers to rest upon being more suitable. Further, when the bulk of the flowers are arranged it frequently happens that by inserting small choice bits here and there a great improvement is made in the wreath. This may be done easily where moss is employed as a foundation, having a piece of stem wire to pierce the moss, and doubling it back as it emerges from the opposite side secures it in position. When cotton wool is used it will not allow of wire passing through it. For these reasons, and for the fact that moss retains the moisture considerably longer than cotton wool, which robs the flowers of the little moisture which is about them, I am strongly in favor of a moss foundation. Wreath skeletons made in various sizes are sold by horticultural sundriesmen, but all I have seen are anything but suitable for the purpose. They consist of two wires arranged in circles at about 1½ inches apart, and fixed by about four cross wires. This leaves a large cavity with which it is difficult to deal, and also uses an immense amount of binding wire in the work of arranging the flowers. One of the simplest contrivances I have seen is made of block tin cut in circles about three-quarters of an inch in width, or they may be made of scraps and soldered together. In the latter way, though a little more trouble in making, they are firmer than when cut out in one piece. Any tinman will make them. I have used these in quantity in sizes ranging from 5 to 12 inches in diameter."

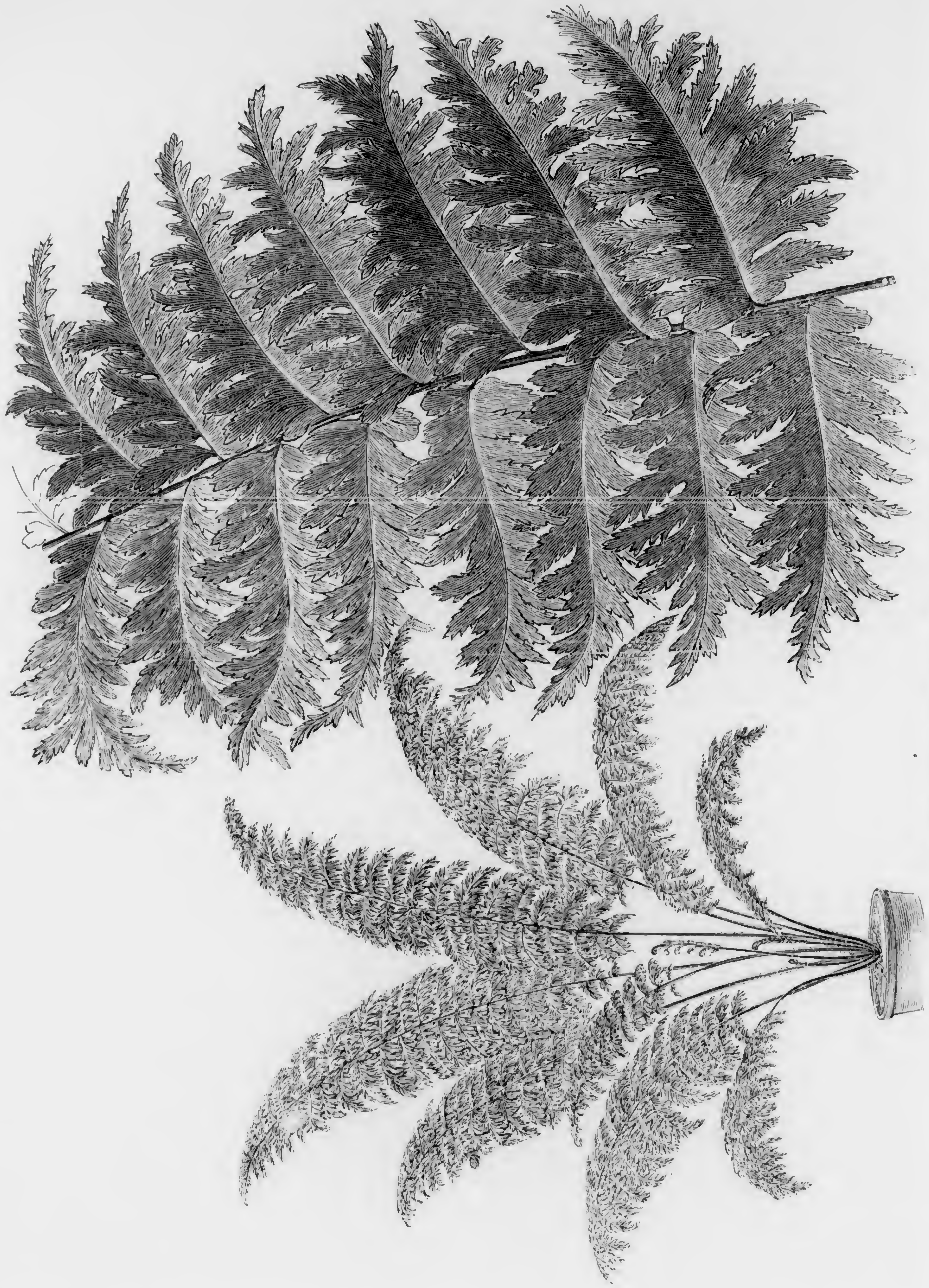
ARRANGEMENT OF FLOWERS IN WREATHS.—The *Journal of Horticulture* gives the following hints to beginners:

"It may not be out of place for a moment to refer to the arrangement of a wreath, though, as I before remarked, much will depend on individual taste. Presuming, then, the flowers are cut, such as Bouvardias, Lily of the Valley, Roman Hyacinths, Gardenias, Tuberoses, Eucharis, Azaleas, and double Primulas will need wiring, and Camellias and Roses will need piercing, the former on account of the custom to twist off the flowers with no wood attached, hence stemless, and to prevent them from falling; and the latter to keep them from becoming too gaping. If at hand some small sprays of Cupressus Lawsoniana will be serviceable, and assist in the economizing of Maidenhair Fern, which is generally a scarce article at this time of year. Begin the arrangement, then, by laying a spray of Cypress, and upon which place a frond of Maidenhair, the latter somewhat protruding and not too flat; then comes a Camellia, Eucharis, or Gardenia—or, in fact, any of the larger and more prominent flowers to occupy the centre, filling in the sides with smaller flowers. Lily of the Valley, Deutzia gracilis, and Roman Hyacinths do well for fringing the sides. Continue the use of the Cypress, and insert here and there a small spray of Fern, firmly binding them as you proceed, and using a small pinch of moss on the stems of the flowers. This will keep the wire from cutting the stems, and will also supply moisture to them. Always avoid a heavy arrangement and overcrowding, and allow as far as possible the flowers to assume their natural position. Use the flowers in as much variety as possible, and, if procurable, a few well-colored sprays of Panicum variegatum will be found very pretty and effective jutting out here and there. It is productive, too, of lightness and elegance, which should characterize the arrangement throughout, and with it and Maidenhair Fern interspersed among the flowers a very pleasing and elegant wreath may be formed. In case of packing this is easily done by placing a stick across the skeleton, allowing it to rest on either side under the flowers, and attach a string to its centre; then make two holes in the bottom of the box, pass the string through and fasten securely underneath. It will travel safely thus, and the person unpacking it will see at a glance how it is secured."

NEW OR RARE PLANTS.

A NEW KIDNEY SCALED FERN (see illustration on next page).—Among the easiest ferns to grow are the various forms of "Kidney Scaled Ferns" or Nephrolepis, and some few of them are common in window and room gardening. We give herewith an illustration of a new variety of a species natural to the Fiji Islands. It was introduced to cultivation by the firm of Messrs. Veitch & Sons, of Chelsea, near London. It has at once taken a stand in popular favor, and was recently exhibited at a meeting of the Massachusetts Horticultural Society. We have the following account of its origin and special features from Messrs. Veitch & Sons:

"*Nephrolepis rufescens tripinnatifida.*—This is unquestionably the handsomest and most effective of all the forms of the widely distributed Nephrolepis rufescens yet discovered; it is a native of the Fiji Islands. The fronds are tufted, erect or sub erect, 2 to 3 feet high; the stipes and rachides are of a glossy red-brown color and clothed with ferruginous tomentum. The pinnæ are much cut and divided into segments in endless



Nephrolepis rufescens, Var. tripinnatifida.

variety as to length and form, the lower pinnæ being the simpler, gradually becoming more complex upwards. The aspect of the plant is light and graceful in the extreme; for the decoration of the stove and for baskets, it is the finest plumose Fern known."

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

CELERY AT KALAMAZOO.

BY JOHN VAN BOCHOVE.

I saw a note in Editorial Notes about Kalamazoo Celery, saying it would be interesting to know the cost of land per acre, etc. I thought I would give you a few notes which you can publish or not, as you may see fit.

It is estimated that two thousand acres are under cultivation. From which, nearly all, two crops are taken, and occasionally three crops in one season. Eighteen hundred persons, including men and the members of their families, are engaged in the cultivation of this vegetable; and thirty-five hundred people who get their living either directly or indirectly from celery. Twenty and thirty and not infrequently fifty tons are shipped daily during the shipping season, which commences July 1st and continues until the celery is all disposed of, which is usually before January 1st. The lumber for the boxes used in packing the vegetable alone cost $20,000 last season. Land which formerly would have been considered dear at $30 per acre, is now held at from two to eight hundred dollars per acre, according to location.

The demand is excellent this season. The growers will commence to coop the first of next week and have most of it in by Nov. 1st, when we may expect cold weather. The price is fair this season. The grower receiving 15 cents per dozen stalks. The amount of celery shipped from here this season will crowd one-half million dollars pretty close. The crop is very fine notwithstanding the severe drouth we have had all summer.

Kalamazoo, Mich.

CARE OF PLANTS ON ARRIVAL.

BY P. M. AUGUR.

Customers on receiving Strawberry plants should care for them immediately. If the ground on which they are to be set is not in condition to receive them, they should be heeled into the ground at once in a shady, moist place, instead of allowing them to remain in the package for several days, as is often done. Expensive plants should be put in single and with care; not in bunches. If possible, however, the soil should be ready for the plants before they arrive, so that they can be set at once in the place intended for them. In case of extreme drought it is advisable to wait for rain and set later, rather than to run the risk of losing plants. If set in warm, dry weather, the roots should be dipped in a muddle just before setting, taking care to have the crown of the plant even with the surface of the ground when set, and having the soil pressed firmly around the plant; after setting, the plants should be mulched in dry weather, with coarse litter or berry baskets or boxes. Keep the soil in good cultivation until the ground freezes, and then mulch the whole surface over with coarse manure, hay or straw, or whatever is most convenient. In the spring this mulch should be partially removed, loosened or adjusted so as to let the plants grow through. The mulch in spring and summer will help keep the weeds down, protect the berries from dirt during the fruiting season, and help hold the moisture in the soil in case of drought. A little extra care at the right time will often prevent loss of plants, and bring a large increase of profit for the expenditure.

Middlefield, Conn.

EDITORIAL NOTES.

THE AMERICAN APPLE CROP.—These are more abundant in the east than usual, though poor in the west, and prices are on the whole fair. It is found by experience that it does not pay to keep orchards of apple trees after they once begin to pass their prime. Those make the most money who have young orchards continually coming on.

AMERICAN APPLES IN ENGLAND.—No less than 15,000 barrels of apples were received in Covent Garden market, London, during the week ending December 9th, 1886, and these were considered but the balance of a much larger quantity received during the week previous. These were all shipped from Canadian ports.

THE ORIGINAL BARTLETT PEAR TREE.—This tree of the Williams Bon Chretien, distributed by Mr. Bartlett from a tree on his grounds that had been imported but had lost its name, is still growing at Roxbury. The grounds now belong to a religious organization known as the Little Sisters of the Poor.

LE CONTE PEAR.—This is not advocated in Florida as equal in eating qualities to the best of the common pears, but they cannot get good pears of the old kind to grow well in Florida. But they are fair eating, for all, when wrapped in paper and put in a close place. They make admirable preserves, and perry from it is better than cider. The public has taken hold of it. Everybody buys it, and it is considered a remunerative kind to grow.

PEACHES GRAFTED ON THE WHITE THORN.—It will not be at all wonderful should that be proved which is now only probable, that the peach and the plum will hybridize. Mr. Ed. Lefort, Secretary of the Horticultural Society of Meaux, has seen peaches grafted on the English Hawthorn. He says the trees are remarkably vigorous, and produce annually abundant crops.

A GOOD PEACH YEAR IN THE EAST.—It is said that the peaches exhibited before the Massachusetts Horticultural Society this year, have been better than for many years.

LOCAL PEACHES.—Local varieties are getting into such prominence as to very much worry those who grow trees to supply the whole Union. In a long list which we recently saw of popular peaches in Florida, all were wholly unknown to nurseries generally. It is more or less so all over the country.

FOSTER PEACHES—raised at San Bernardino, California, last autumn, measured 13 to 14 inches round, and three weighed a pound and three-quarters.

STOCKS FOR PEACH AND PLUM.—It is said the peach and plum do not do well on stocks of the Chickasaw breed, in Florida.

MORE JAPAN PLUMS.—Mr. Burbank, of Sacramento, has fruited forty-three varieties, and has selected two of these as being remarkably fine; one six weeks earlier in ripening than the Kelsey. Of these, the editor of the *Pacific Rural Press* says:

"These fruits are exceedingly interesting. The first mentioned is the larger. The specimens sent are almost globular, being 6¾ inches around horizontally, and 6⅝ inches around vertically—thus a shade broader than deep. The color is dark red, almost solid color, except a slightly lighter shade in the suture. The bloom is thin and of a lilac shade. The flesh is dark red—solid color from skin to pit, firm, rather juicy, and of good flavor. Pit very small; ¾ by ½ inch.

"The smaller plum mentioned by Mr. Burbank is also almost globular, being 5½ inches around horizontally, and 5⅝ inches around vertically; rich cherry red, slightly mottled with yellow, and freely dotted with the same tint; flesh deep yellow, juicy, very sweet, and of fine somewhat peculiar but very agreeable flavor. The pit is also very small; ¾ by a shade over ½ inch.

"It seems to us these plums are very desirable. The smallness of the pits of the true Japanese varieties is striking. A plum 2¼ inches in diameter with a pit but half an inch, is a point of notice and value. We should advise Mr. Burbank to multiply his stock of these varieties."

SLAG AS A FERTILIZER.—We give below a paragraph from the *Scientific American* because it is important to the cultivator of the soil to know what is going on in these things. We give it rather as in the nature of a warning, than an endorsement, for all experiments to get value out of these articles have failed. It seems that to be beneficial they must first have first entered into the structure of a plant or an animal. There is no more common element in natural soils than potash. It is a component of feldspar that goes to make up a large portion of soil on granite foundations. Yet there are no poorer soils than these, unless heavily manured. But wood ashes, or the potash that is obtained from vegetable matter is often very valuable for fertilizing. So we know that the phosphate of lime derived from bones, or the tertiary shell formations of Charleston, or the rotten shells in the sands of New Jersey, is wholesome food for plants,—but we very much doubt whether phosphate of lime derived from limestone and phosphoric acid would amount to much. If this were so, we might have a phosphate factory near every limekiln. We should hesitate before paying $20 a ton for phosphatic slag, however many "able scientists" backed it up.

"The slag from the Thomas-Gilchrist process for making steel has long been supposed to have valuable properties as a manure. In the Bessemer converter, there is a lining of lime which, in the process of manufacturing the steel, takes up a large percentage of phosphorus, in the form of phosphoric acid. Phosphate of lime has been used as an artificial manure, in a variety of forms, with very beneficial results on most lands. It was thought that the basic cinder obtained in the Thomas-Gilchrist process might, from its large percentage of lime and phosphoric acid, have a manurial value.

"Some two or three years ago, experiments in this direction were undertaken in Germany by M. Fleisher and others, and from the data which they obtained, it appeared that under certain conditions basic slag had a very marked influence upon crops grown on soils which had been top-dressed with it. It was ground into a very fine powder, and then the acids of the soil were able to dissolve the phosphoric acid which it contained; and it was then in a condition to be readily assimilated by plants. Attention is again being called to this point in consequence of a series of similar experiments which have been carried out by Dr. Munro, at Downton, for the North Eastern Steel Company, and which fully confirm the earlier experiments of the German investigators. It was thought that probably the slag would be more efficacious if it were first converted into a "superphosphate," in a similar manner to bones; but Dr. Munro and Mr. Wrightson seem to think that this is unnecessary, if care be taken to have the basic cinder in as pure a state of division as possible.

"As basic slag is a waste product, and hitherto has had no industrial application, it ought to be obtainable at a much cheaper rate than the Canadian apatite, coprolites, and bone manures, which have until recently been the chief artificial fertilizers used in agriculture. Dr. Griffiths has recently, in papers read before the Chemical Society of London, advocated the use of iron sulphate as a manure, and as basic slag contains a considerable quantity of iron in the same condition of oxidation as in ferrous sulphate, it may also have some effect upon the manurial value of the Thomas-Gilchrist slag."

UNDER-DRAINING.—This has not made much headway in our country, because land is cheap. The cost of draining is often more than the market price of the ground. It pays better to have half a crop than a whole crop at so much outlay of ready cash. But times are changing. The advance in the value of land will make underdraining profitable. Not only soils that are always wet, but those that bake in a dry time, are benefited by under-draining. Double the crops can be had for the same labor on such soils when under-drained.

WEARING OUT OF VARIETIES.—It is amazing how old questions, long since settled, continually come up for discussion. It would pay speakers to examine files of standard publications before wasting public time in giving thoughts derived from their own limited experience. We have known some favored grower of a white Doyenne pear, argue that the variety is as good as ever, in face of hundreds of examples that the fruit is valueless from a fungus attack having worn it out, —and in like manner the well-known fact that in a large number of localities the famous Albany seedling strawberry has lost the power of producing hermaphrodite flowers, and yields only staminate ones, goes for nothing at all with those in whose localities it still happens to hold its own.

It has come to be a well-known deduction, we thought, that varieties sometimes do and sometimes do not wear out. Some hold on longer than others, while some soon get unhealthy. It seems to be a law of nature that all things, sooner or later, shall wear out. Some go earlier than others. Some children die young,—some last to be centurions. Thousands of species of plants have been on the earth, as fossil botany shows, that have worn out and been replaced; though some, like the sensitive fern Onoclea sensibilis, have endured from the first till now. There is no reason to believe that varieties have any greater power than species. Some die young, some last a good while, all wear out in time.

NEW FRUITS BY HYBRIDIZATION.—The leading scientific minds of England, instead of teaching that hybrids are generally sterile, mostly believe that many of the leading kinds of fruits and flowers in cultivation, the history of which is lost, came through species hybridizing. In regard to this origin, however, Mr. Rivers recently stated his belief that the peach has been improved by selection and not by hybridization. In a recent discussion he said:

"As regards the range of variation of plants of pure descent, he would mention the many new fruits raised by his father, Mr. Thomas Rivers, to which he had himself added, in continuation of his father's labors. Take the peaches for example; they were of pure descent; the peach had never been hybridized. Certainly there was no known record or evidence of such an occurrence, therefore all peaches were peaches pur et simple. Yet how various in character, and not only different in size, season, color and flavor, but in the smoothness or otherwise of the skin; for Nectarines were true peaches derived from the peach-stone, and he had seen both fruits in perfection on the same tree, and even on the same branch."

FRUITS OF JAPAN.—H. H. Berger says:

"The principal fruits of Japan are the persimmon, chestnut, orange, different plums, loquat, Prunus tomentosa, some very poor sorts of peaches, apricots, a small and sour apple, and a very hard and tasteless pear. Their berry fruit is small and sour. The persimmon is raised all over the country; wherever you travel these stately, beautiful trees, with their glossy green foliage, greet the eye.

"After a most careful research I could only find the following varieties of plums indigenous to Japan: The Botankin or Kelsey's plum, which needs no description, being too well known; the Hattankin, which is in reality only a sub-variety of the Botankin, differing somewhat in coloring of fruit; the Nagate or Botan, a round, reddish blue plum, half early; the Shviata Bene or Uwase, called here the "blood plum," on account of its red flesh; the Nagame o Smomo, a yellow plum; the Shire Smomo, a whitish plum, late ripening (more of a gage), and one very early ripening plum, called Yosobe, a round, yellowish plum, with rich, red bloom overspreading it. The Prunus Mume is the commonest plum of Japan, a small, greenish fruit, extremely acrid and disagreeable. It is pickled in brine by the natives, and as such, much relished. Other varieties of plums, which have come into the market under the name of Japan Plums, are only European sorts which have come into the hands of the Japanese gardener, and are by them sold to ignorant parties as Japanese varieties. Most Japanese gardeners will sell you an apple for a plum tree, if you will only pay them."

THE PHYLLOXERA has at length become nearly as bad on the roots of the grape-vines in California, as in Europe. In some localities the plantations are nearly ruined. They are, however, doing as the wide-awake vineyardists of France are doing. grafting on the American stock. The varieties of the species Riparia are found to be the best. The insect attacks these vine roots as well as the roots of the European, but on account of the very fibrous rooting character, they do not suffer much. The young roots grow faster than the troublesome little insect can follow them. Hence these species of the grape are known as resistant grapes. Julius Dressel, of Sonoma, in California, has seventy acres grafted on many varieties of the Riparia section that are thriving wonderfully, and grafted grapes will soon be a leading industry in California.

APRICOTS IN CALIFORNIA.—According to the *Rural Press*, the Breda is not popular, and the budding of the apricot on the almond does not do so well as once hoped for.

THE CHINESE QUINCE.—There seems to be a growing popularity for the Chinese quince in the South,—not because it is better than the ordinary quince,—but because it does well where that one will not. A Florida correspondent of the *Dispatch* thus presents its claims:

"I must say that the Chinese quince, as to the tree, is full hardy in the South, and is a rampant grower and makes a large tree in twelve or fifteen years. I have one thirty feet high, twelve years old. It gives an abundant crop annually of very large handsome fruit. Now, as to the quality of fruit. I think there are better quinces for table use, but I have been unable to get them to grow and give enough fruit to pay for the care they require in the Southern climate. The Chinese quince is very much like the Le Conte pear. While it is not the best in the wide world, I can get ten bushels of it before I can get one of the others."

SEA KALE.—It is said not to pay in gardening to take much trouble to get things good, and hence we have to go altogether without the good things. We suppose few in our country ever ate Sea Kale, yet it is one of the most delicious of all the vegetables raised in an English garden. Large earthen pots like old-fashioned bee-hives are placed over the plants in November, and the leaves from the trees grown on the grounds covered over several feet deep. The gentle warmth from the leaves starts plants early, and the huge pots are filled with crisp, blanched leaves. Manure will not do, as it brings the plant forward too rapidly and makes it very weak.

It is a trouble to do all this, but worth the trouble when grown. It is the great care required to make such nice things grow well that makes an educated gardener a necessity in the Old World; and possibly the disposition to do nothing in gardening, except what will take care of itself, one of the reasons why in our country the educated gardener is not in so great a demand.

VEGETABLES IN UTAH.—Few people have any good idea of the enormous productiveness of desert soil when a little water starts it into life. Dry soil, as is well known to those who have had experience with earth-closets, is a wonderful absorbent of nitrogen. The dry earth on the deserts absorbs nitrogen from the atmosphere till the ground is one grand hot-bed of manure. When by irrigation, or light rains, vegetation can get a start, the crops surpass belief. In Utah 600 bushels of onions, 900 bushels of potatoes and 1200 bushels of carrots have been obtained from an acre of ground for each. Twenty-four millions pounds of potatoes have already been shipped from Salt Lake City this season.

EARTHING UP CELERY.—*Gardening Illustrated* has the following:

"Although I know that it is the usual practice in celery culture to repeatedly earth it up while growing, I certainly do not think it necessary to do this when it is growing rapidly; more than that, I think it is bad practice. A little sprinkling of earth, pushed down after a heavy watering to prevent evaporation, is all I should give during the growing season, and I know it to be a fact that some of those who grow the finest celery in the country do not earth until full growth is attained. Indeed, some of them do not earth it at all, but effect the blanching by other means. That some old professionals of fifty years experience, and many other persons, pursue quite a different course, I am well aware; yet one would think that a single hint would suffice to point out that it is difficult to give abundant waterings to celery, and impossible for it to benefit by the natural rains, if we pile a sharply sloping bank of firm earth close along each line long before the plants have attained maturity of growth. And no plant is more

benefited by profuse waterings than this, naturally an inhabitant of very wet places. The repeated earthings which celery receives in the majority of gardens are not only harmful to the celery, but the cause of a great waste of time and labor."

We extract it for our readers because we think it is not American experience that frequent earthing up injures celery, and we should like to have our readers tell what they know about it. Of course, earthing it up before the plant has got strength and vigor is an injury, but we doubt whether there is any injury after that. On the other hand, the most crisp celery we believe follows frequent earthings.

ASPARAGUS IN CALIFORNIA.—If they cannot boast much of celery in California, they can talk "tall" on asparagus. The *Rural Press* says that at Santa Cruz Hy Jackson has, we believe, one of the oldest asparagus beds in the State. He planted it about thirty years ago, and it has continued to yield abundantly each year. Asparagus is a prolific and profitable vegetable when carefully cultivated. Wherever its cultivation has been attempted in this valley, it has been successful.

NEW AND RARE FRUITS.

THE BURGER GRAPE.—This seems to be a California variety, or at least is very popular for wine making purposes. The juice is used to mix with other grapes which it is said to assist in fermenting rapidly. As high as $18 and $20 a ton has been offered for it this year.

THE PEACH TOMATO.—Messrs. D. Landreth & Son, Bristol, Pa., sent us recently a basket of an entirely new form of tomato which they call Peach Tomato. It is a great merit to have a variety that one can distinguish at once from another. These might be as easily mistaken for peaches as not. In a garden they must have a very pretty appearance. They are said to be very productive, and we take it to be a good addition to the already large list of tomatoes.

NEW TOMATO.—The Puritan is the name of the newest candidate. It is from Boston.

NEW POTATO.—A variety called Charles Downing, was exhibited at the August 20th meeting of the Massachusetts Horticultural Society, by Charles N. Brackett, and much admired.

FORESTRY.

COMMUNICATIONS.

TREE PLANTING IN KANSAS.

BY ROBERT DOUGLAS.

Kansas is comparatively a new State, and when we take into consideration that the first settlers in our prairie States always settle near the timber, we see by the immense number of trees her citizens have already planted, that in a few years she will surprise some of our writers who are deploring the apathy of the people. Indeed, I think that many writers who are warning the people of this impending danger of forest denudation, are not aware of what is being done in that direction. I judge this is the case from articles I see greedily copied, of what is being done in Europe, compared with the little that is being done here. Two or three years ago a statement was published, giving the actual number of forest trees that had been planted that year in England, Scotland, Ireland and Wales. I was surprised to see that in the aggregate they did not reach 3¼ millions, just about the number they would plant on 1,000 acres, and yet what we are doing in this country is looked upon with contempt. Surely these Editors and Essayists either can not find time, or will not take the trouble to inquire about what is being done in their own country. They can not be aware that the State of Kansas alone, since she commenced this new industry, has planted 147,340 acres. Think of it! Great Britain and Ireland, 1,000 acres in one year. The State of Kansas, a new State, peopled by families who went out within the past few years to work a living out of raw prairies, have planted 147,340 acres!

"But," say some of our forestry friends, "What does it amount to?" "They are planting worthless trees." Let us see about that: 11,500 acres of Black Walnut, 12,486 acres of Maples, 2,637 acres of Honey Locust, 55,553 acres of Cottonwood, 65,771 acres of other varieties. Admitting that the Cottonwood does not rank among the most valuable woods, it is a god-send to the new settlers, as it makes fuel in less time than any other tree. In this tree, we see history repeating itself; in ancient Rome, the genus, Poplar, derived its name from being the people's tree. Some writers—not planters—recommend mixing the Cottonwood with other trees, to be cut out for fuel in the future. But as far as I have seen, the practical farmer knows better. To him it would seem like turning a drove of Texas steers into a herd of Jerseys.

TRANSPLANTING EVERGREENS FROM THE FOREST.

BY GEO. H. PARSONS.

Transplanting conifers may be done at any time when there is no frost in the air, except while they are making their first young growth in May or June. Perhaps the best time is during the spring and summer rains. Select small trees in preference to larger ones, for they have not such a firm hold upon their location, and adapt themselves more easily to new places. Trees from open, rather exposed places will succeed better than from shady cañons. Never leave the roots a moment exposed to the sun and air. This is the great secret of transplanting evergreen trees from the mountains. Keep the roots protected. Provide yourself with a piece of matting or sacking or burlap, and after carefully tying up the tree with all the roots uninjured, and with as much earth about them as possible, place it in the matting, and cover with more earth. In planting, which should be done as soon as possible, take the same precaution about exposure to air, digging a large hole, spreading out the roots, and pressing down the soil firmly about them. Shade the trees during the first year, summer and winter, and keep the soil moist and cool about them. The blue spruce, especially, requires constant moisture until well established. The two most important factors in successful transplanting are, roots well protected while moving, and a moist, cool soil about them when planted. In order to retain this needed moisture and coolness in the soil as long as possible. it is best to mulch, or cover the soil, for about two or three feet around the tree, with coal ashes, hay, straw, or dead leaves. When the trees are well established the branches themselves will shade the ground around them, and it will be only necessary to supply them with water, which should be sprinkled over the whole tree as well as on the ground around it. The end, of those branches which are too long should be pinched back, by merely pinching off the end of the new growth as it forms. A tree should never have more than one leader, and when this should be lost and two or three others start up in its place, one of these should be selected and the others pinched back. In this simple way, requiring only a little watchful care from time to time, you will soon have a compact, pyramidal, perfectly formed tree, a charming monument of vegetable beauty, whose grand and lofty qualities will never tire, but be a source of unending delight, "a thing of beauty and a joy forever."

[Mr. Parsons, who gives the above sound advice, is President of the Colorado Forestry Association, and last March made an admirable address on Forestry at Colorado Springs.—Ed. G. M.]

EDITORIAL NOTES.

ROADSIDE TREES.—One of the misfortunes of our country is that over the most part of it we cannot have roadside trees and live hedges at the same time, as they do in the British Isles. If we have trees along the hedge row, the struggle for moisture during our hot and dry summers, so weakens the vital powers of the hedge plants that they die in the severe cold weather. In the old world the cooler and shorter summer, and the moister climate permit the union. Here the live fences and fence row timber will not mix.

THE GREEN ASH.—Mr. Douglas finds as the result of experience that the green ash is much better adapted to Western circumstances than the white. On the other hand the white ash is best for Eastern forestry.

THE CHESTNUT IN THE PRAIRIE STATES.—Robert Douglas says that of the thousands of sweet chestnut trees planted in the West only an occasional one survived. The black walnut thrives admirably.

FORESTRY IN AMERICA.—Robert Douglas, the Nestor of American Forestry, told the American Association of Nurserymen last year that when forestry in this country is conducted in a plain business manner, and it is shown to capitalists that it is a profitable and safe investment, as it assuredly is, it will then be shown that we have the men ready to commence the work. There are not only dozens, but scores of men, members of this Association, who could take a contract to plant 1,000 acres annually without interfering with their home business, and deliver it over in 10 to 12 months from the signing of the contract. The process is very simple. We will say he makes his contract in February. In March, having ordered the seeds and the tree-digger forwarded, he steps on the train, gets off at the proper place, goes to a neighboring farmer, and leases 30 to 40 acres of land prepared for planting corn. He engages breaking teams to break the 1,000 acres, and the same men to cross plow in the autumn. While this is going on he has men and teams growing and cultivating the seedlings. In the prairie country he will be sure to find two months of fine weather during the autumn; thirty days will do. One hundred men will plant 1,000 acres in 30 days. He comes home to his Thanksgiving dinner, after the trees are all planted, and if he is inclined to think he has accomplished something wonderful, he may have his pride somewhat humbled by noticing that a new railroad has been built since he went out, employing 1,000 men, while he has been dallying along with his 125 men; or possibly he may notice a farm on which wheat has been sown a month after he went out, and that 20,000 acres of wheat have been sown on that farm, harvested and sent to the elevator, and the whole 20,000 acres fall plowed, ready for another crop the following spring. Let us possess our souls in patience. The fertile districts of this country will not become a desert in less than 100 years; but in less time than that, much of the desert portion of the country will blossom as the rose.

SOME LARGE TREES OF LONG ISLAND.—The *Brooklyn Eagle* says:

"It is not probable that any tree on Long Island is more than 500 years old, and very few in New York or New England are of greater age. Formerly there stood at Flushing, near the old Bowne homestead, two oaks known as the Fox Oaks, from the fact that George Fox addressed the people beneath them. That occurred in 1672. Both the trees have disappeared. One was blown down September 25th, 1841; the other fell more recently. Mr. Parsons, of Flushing, counted as nearly as possible the rings of growth in the one last mentioned, and found more than 400 rings, indicating its great age. Mr. Parsons has two oaks standing on his premises nearly or quite as old.

"Two miles south of Glen Cove, in front of the late residence of James Luyster, deceased, is a venerable white oak which is probably nearly 500 years old. It was as hollow as it now is seventy-five years ago. The diameter of the trunk at the ground is 7 feet and at 6 feet from the ground it is still 15 feet around, or say 5 feet in diameter. The chestnut tree attains a very large size on Long Island. At Brookville, Port Jefferson, Smithtown and a few other places are trees, remnants of old forests perhaps, which measure from 15 feet to 22 feet around near the ground. But the chestnut grows rapidly and none of the large ones may be more than 100 or 150 years old. The tulip tree is one of the most beautiful of forest trees and grows to an immense size. One on the high ground at Lakeville is 26 feet around at 6 feet from the ground, but is not more than 70 feet high. Its immense crown of branches is supported by hoops and braces of iron. The great black walnut tree on the estate of the late William C. Bryant, at Roslyn, is a magnificent tree. Its age is about 175 years. The girth of the trunk at 7 feet from the ground is 23 feet. At the ground it is 29 feet around. The extreme spread of its branches is 120 feet. The immense size and age of many trees on the island indicate clearly enough the adaptability of its soil and climate to their growth. The locust is an extremely valuable tree on Long Island, and in quality is superior to any of its kind growing elsewhere. It was introduced here, as I believe, from Virginia, by Captain John Sands sometime previous to 1712. Captain Sands moved from Block Island to Sands Point, about 1695, and sailed a packet between New York and Norfolk, Va. He died about 1712. It is known that several locust trees brought by him were planted near Sands Point and elsewhere. Most of them have fallen or have been removed. But a few remain and are still flourishing. Of these, two are on the lawn of the old Thorne Mansion at Great Neck, three are on the lawn of Daniel Bogart, Esq., at Roslyn, and one on the premises of the late Elwood Valentine at Glen Cove. It seems probable that the locust may live and flourish in favorable situations nearly two centuries."

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

THE HOUSE SPARROW.

BY RUSTICUS.

I wish to institute a crusade against the House Sparrow, erroneously named English Sparrow. I would like to see the warfare waged throughout the United States. It is what I should term, in a certain sense, a holy war. I ask men, women and children to aid in their complete extermination with poison, trap and gun. I urge upon State Legislatures and the American Congress to legislate persistently for their wholesale destruction.

Asks some one, "Why such invective against a little bird?" I reply, because they are a national calamity, and unless put an end to will so prey upon fruits, vegetables and farm crops that it will be next to impossible to raise them. It seems to be the peculiar delight of this miserable bird to waste and consume these useful products of the earth. So far from accomplishing the object for which they were imported into this country, they make the trouble worse. The tent caterpillar was committing fearful ravages on fruit and ornamental trees. Certain zealous persons were "fully persuaded in their own minds" that this bird was expressly created to annihilate said caterpillar. It must be at once brought to this "land of the free, and home of the brave." Wonderful things were to follow such importation. Sir Caterpillar was to disappear like a dream of the night! The sparrow came, and the caterpillar yet lives. It crawls safely on the very nesting boxes of the puissant sparrow. It doesn't agree with it. Those birds that do devour the caterpillar are, many of them, at least, killed and driven off by the pugnacious sparrow. It was a grievous error ever bringing to this country such a tireless enemy to fruits and other crops. We must now strive to abolish them. Some States have begun the destruction. Legislatures are legislating them out of existence. They were first imported in 1850. Eight pairs. Other importations followed. They have increased enormously; having established themselves in thirty-five States and Territories, overspreading 885,000 square miles. Heat and cold, the extremest, do not affect them. They are "iron-clad." Since 1872 it has spread over 59,000 square miles annually. The annual loss to gardens and orchards amounts to millions. Let me particularize to substantiate my position. I hope I do not fire "scattering shot." I am a warm friend of the birds. I enjoy them. Their carols are, to me, indeed, "music in the air." They are not molested at my home. They multiply about me. The air is vocal with them. But the detestable house sparrow has no friend here when I can wring off their heads. "Of all the native birds which habitually make their homes near the abodes of man, the Martin is the only species which is able to hold its own against the sparrows, and numerous instances are on record where even the Martin has been beaten and forced to abandon its former nesting-places by these belligerent aliens." (Ag. Report for 1886.) "Robins, Cat-birds, Yellow-birds, Orioles, Vireos, Phœbes are the greatest sufferers." "Our native birds have rapidly and steadily diminished in numbers since the sparrows came."—(Idem). "Indeed, it is safe to say that it now exerts a more marked effect upon the agricultural interests of this country than any other species of bird, and its unprecedented increase and spread, taken in connection with the extent of its ravages in certain districts, may be regarded with grave apprehension."—(Idem). "In the early spring it prevents the growth of a vast quantity of fruit by eating the germs from the fruit-buds of trees, bushes and vines, of which the peach, pear, plum, cherry, apple, apricot, currant and grape suffer most. Lettuce, peas, beets, radishes, cabbages and cauliflower are attacked in turn. In some places they are obliged to cover gardens with netting."—(Idem). W. C. Percy reports: "They destroy more tomatoes, peas, beans, etc., than any other bird. In 1884-85, they ruined the peach and apple crops." N. A. Wood, Michigan: "They eat green peas as fast as they grow; also raspberries, blackberries and strawberries." Says F. M. Webster, Indiana: "These birds are worse than all other apple pests combined." From Bowling Green, Kentucky: "It has ruined the grape crops wholly where unprotected. Its consumption and waste of corn, wheat, rye, oats, barley and buckwheat in many parts of the country is enormous. It feeds upon the kernel when it is in the soft, milky state, and in fields of ripe grain it scatters upon the ground even more than it consumes. Instances are reported where in the place of a full or fair crop only the straw remained to be gathered." (Hoadley M. S.) In my next I will give more instances of its ravages, with your permission. *The Maples, Lexington, Ky.*

REASON IN INSECTS.

BY E. S. H.

I see in current number of *Popular Science* some proceedings of a hornet in the management of a dead locust, as related by Professor Thomas Meehan, and am thus reminded of a similar incident I observed last summer. I was making a path, when a large hornet, carrying a locust whose weight was rather too much for him, fell exhausted just by me. He dropped his victim and withdrew to a stone, where he sat for some time rubbing his head and considering the situation. Getting himself together again, he caught the locust by the head and began to drag him along the path, but soon found he would not get home before Christmas at that rate, so he left his game again and flew off to find a spear of timothy stout enough to

bear his weight at the top. Several seemed to hold him up fairly well, but still he was not suited, and I could only suppose him a hornet too irresolute and weak-minded to manage his affairs properly, until it occurred to me that he was searching for a stem that would bear both himself and the locust. At last he found what he needed, laboriously pulled up his prey, gave a spring and a buzz, and was off, bearing with him his locust and and my profound respect. *Philadelphia.*

[The communication in the first instance was made by Mr. Meehan some years ago, to the Academy of Natural Sciences of Philadelphia, and the fact quoted among a number of others by the President of the American Association for the Advancement of Science, in his annual address at the recent New York meeting. Another parallel case has since been placed on record—this making the third.

The three highest mental attributes are here portrayed: perception, reasoning, judgment.

In view of these experiences it becomes extremely difficult to draw the line between mind in man and mind in animals. We may call the one instinct, but calling it instinct does not make the explanation clearer.—Ed. G. M.]

THE HORSE NETTLE AS A WEED.

BY M.

The Horse Nettle, Solanum Caroliniense of Linnæus, is one of the worst weeds in American agriculture. From Pennsylvania south to Florida and Texas it is regarded by cultivators as pernicious as the Canada thistle (Cnicus arvensis) is by Northern farmers. It has creeping, thread-like roots, penetrating deeply into the ground, from which arise annually numerous hard, twiggy stems to the height of about two feet, armed with numerous spreading prickles. The leaves are about five inches long, covered with stellate hair, on stalks about one inch long. The flowers are in racemes, opposite to, and as long or longer than the leaves; the pedicels about half an inch in length, and the potato-like flowers, purplish-white, succeeded by yellowish berries about the size of cherries. Every little piece of broken root makes a new plant, and hence hoeing or the ordinary methods of cultivating the soil, only aids in its rapid distribution. The writer has known some farms in Delaware to be wholly abandoned through having been wholly possessed by the Horse-nettle. Dr. Ezra Michener, in his "Manual of Weeds," styles it a "a terrible pest" in Chester county, Pennsylvania, and offers the opinion that "a law requiring that one who has allowed it to take possession of the land, should not be allowed thereafter to have the management of land, would be no more arbitrary, nor unjust than the quarantine laws for the physical health of our cities." The writer once knew a place where the plants had been introduced, and had spread considerably over an acre of ground during three years unobserved. The owner was aware of the physiological law that even the most tenacious roots cannot live long without perfect leaves to provide nourishment for them, and employed a boy to loosen the earth about the plants and draw them out as soon as the leaves appeared. Though carefully drawn out, enough small pieces remained to make a new crop of plants just visible in a few weeks. These were again drawn out early as before. Three of these weedings were made during the season. Having had no perfect leaves there were but few plants the next season, and these were served as before. No plants appeared in succeeding years; they were thoroughly eradicated. This is the only effective remedy, and not as costly as it might appear if timely persistency in it be employed. It is of little use in the arts. The juice of the berries has been found of service in tetanus; and Dr. F. Peyre Porcher, in "Resources of the Southern Fields and Forests," says that the negroes of South Carolina regard it of service as an aphrodisiac. Other species of Solanaceous plants are troublesome to the agriculturist, but none equal to this. One, Solanum rostratum, a prickly annual of the great plains, is believed to be the species on which the "Colorado potato beetle" subsisted, until lines of communication were opened with these regions, when it found in the Potato a more abundant supply of food, resulting in an enormous increase of the insect, and, in many cases, a total loss of the Potato crop.

EDITORIAL NOTES.

Fertilization of Flowers in Compositæ.—Every flower lover knows that asters, daisies, sunflowers and the like belong to that class which botanists call Compositæ; and every one knows that scientific people have had a great deal of interesting talk about the way insects are unconsciously employed in cross-fertilizing flowers. That a number of flowers would never produce seeds except through this agency of insects is unquestionable. The "Adam's Needle," or Yucca, is a well known illustration of this. Unfortunately for true science, popular writers get hold of that which is true and "run it into the ground." A writer of the Grant Allen type, is now giving a series of letters to the *Country Gentleman*, on the fertilization of flowers, which is very pretty reading, but at the same time an excellent illustration of the "running into the ground" type. Here is an extract in relation to Compositæ:

"Now we are ready to see how the pollen is scattered. In the first place, since the pollen is discharged into the tube, and the stigmas, while crowding through it, are pressed tightly together, it is clear that the flower cannot be fertilized by its own pollen. How, then, does fertilization take place? Simply in this way: The two branches of the style, on their way up the tube formed by the anthers, push the pollen out, and get powdered on the outer surface with it. Then they separate, and the styles of the several flowers form a network of interlacing threads over the compound head. Then when an insect visits the cluster—and many of them do—it is sure to brush against some of the pollen-covered styles and gets its under parts powdered with the yellow grains, some of which will be almost certain to get on the stigmatic surfaces."

Now it has been shown in numerous scientific contributions, the few past years, that whatever may be said of other classes of plants, Compositæ are self-fertilizers.

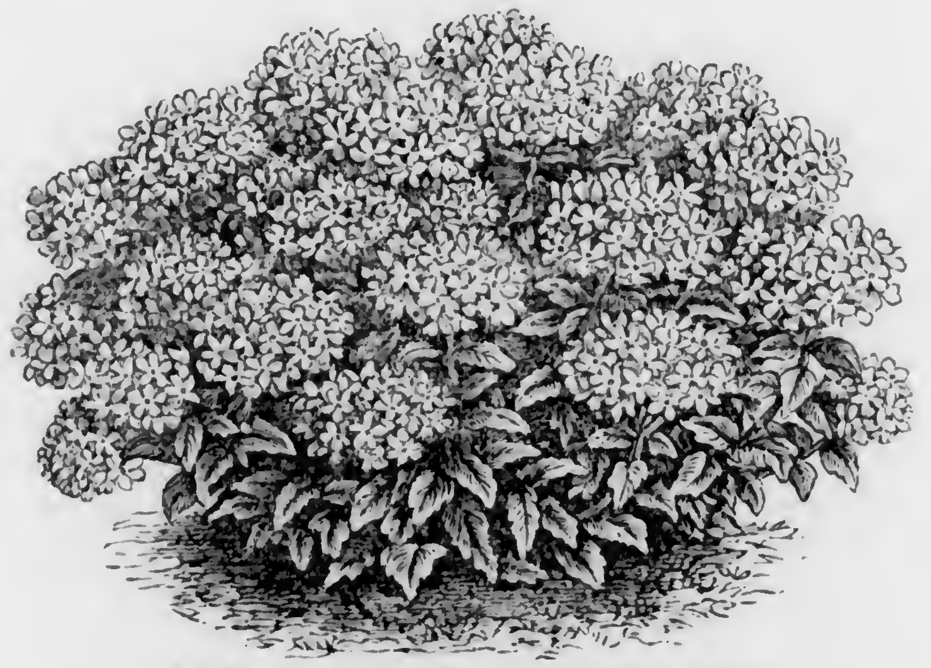
It is the simplest thing in the world to prove this, by tying a gauze net over the flowers and excluding insects. The flowers produce perfect seeds in every case. One of the most interesting accounts on record is the experience of Mrs. Walcott, of Boston, communicated to the American Association for the Advancement of Science, in 1884. She tied gauze over the heads of her sunflowers to keep sparrows from pecking at them. The heads produced seeds all the same, and numbers of just such experiences are on record, and can be easily repeated. Yet we have these pretty writings continually asserting that the "flower cannot be fertilized by its own pollen," in spite of what is becoming an "every-day" fact, that it is so fertilized. One would think that that which comes to pass, must surely be possible.

It is such a simple thing to put a gauze bag over a dandelion or an ox-eye daisy, to keep out the bees, and so certain to find them seeding as freely as when bees have full access, that it is amazing to find writers pegging away on the impossibility of seed under such circumstances.

It has been shown how the pollen tubes enter to accomplish their "impossible" work in these cases—but the fact is a sufficient answer, without this explanation.

MICROSCOPIC FUNGI.—These are now known to have such an intimate connection with horticultural success or failure, that many of our readers must be making a special study of them. It may be of service to note that Profs. Farlow and Trelease have published a list of all known works or papers treating of fungi, which must be of great service to these students.

A NEW RACE OF VERBENAS.—There was a time when it was believed that the proof of a plant being a true species was, that it would reproduce itself from seed—a variety would not. If like would produce like it was in a true botanical sense, a species. Again, it is assumed that if a seedling proves sterile, it may be a hybrid, under the assumption that all hybrids are sterile. The last proposition is no more true than the first, but it still holds in some quarters, while the first has been generally abandoned. There are now so many races of plants known to be varieties reproducing from seed as truly as any good species could, that no one can doubt that there is no difference between like producing like in either species or varieties.



Verbena hybrida compacta nana.

We have here a form of Verbena, that produces itself from seeds just as well as the original species, and yet differs in not having the running or creeping character of the ordinary Verbena, which, as all know, creeps and roots over the surface of the ground. It has lost its creeping character, and makes a dwarf compact bush. Mr. David Sachs, the well known seedsman, of Quedlinburg, tells us that this does not produce bush Verbenas in every case, but the few seedlings that do so are quite exceptional.

Outside of its interest to science, the new race will be very welcome to those who love Verbenas for their own sakes. It makes a white bushy mass, as closely set together as a mass of candytufts; five inches is about the average height of these little bushes. Like all of the European productions of this character, it has had to have a nomen fashionable, which is Verbena hybrida compacta nana, but by the time it gets into American hands, this will have to be considerably shortened.

THE FIRST LIVING TEA PLANT IN EUROPE.—Osbeck's voyage to China in the Swedish ship "Gothic Lion," which sailed in 1750, says: "After a stay of four months and ten days in China, our ship and the other Swedish ship began their voyage home. Every one leaped for joy, and my Tea shrub, which stood in a pot, fell upon the deck during the firing of the cannons, and was thrown overboard without my knowledge, after I had nursed it and taken care of it a long while on board the ship. Thus I saw my hopes blasted of bringing a growing Tea plant to my countrymen; a pleasure no one has been able as yet to feel, notwithstanding all possible care and expense." In a foot note to the English translation, the translator, Forster, says: "Dr. Linnæus has had since 3rd of October, 1763, a fine Tea shrub brought him from China by Captain Carl Gustav Eckeberg, which is, as far as we know, the only one in Europe." Such a feat in those days deserved to be honored. For in those days accidents innumerable, aside from the jarring of cannon, must have pressed sorely against the successful introduction of living plants. Another Swedish botanist, Dr. Sparmann, made a voyage to China with Captain Ekeberg, and in 1779 named a genus of trees, native of the Cape of Good Hope, Ekebergia, in his honor. This tree belongs to the same natural order, Meliaceæ, as our well-known China tree, Melia azederach. Sparmann was one of the naturalists that accompanied Captain Cook in his voyage around the world in 1772.

ORRIS ROOT.—The roots of Iris Florentina, I. Germanica, and I. pallida, are the species of Flag used in Italy to use in perfumery as Orris powder. These are commonly grown in our gardens; but a lady writes that she thinks she has not got it true, for she tasted a piece and it blistered her mouth fearfully. This shows she has the genuine article, for this is how it does behave. It takes two years to dry before it gets its perfume and is fit for use.

JAPAN PLUMS.—So much has been said lately about native Japan Plums, that we have, since our last issue, referred to Franchet and Savatier's enumeration of the plants growing spontaneously in Japan, issued in 1875. Under the name of Prunus, these botanists include what we know as Cerasus or the cherries. They have in all ten species: P. tomentosa, Mume, Pseudo-Cerasus, Japonica, subhirsuta, incisa, Maximowiezii, macrophylla, spinulosa, Ssiori.

Of these only the two first would be understood as true plums, and they are not regarded by the authors as native, but as having been introduced into Japanese gardens from China. The first has fruit no larger than a pea, so that may be eliminated from the Japan plum question, and we seem to be left to the second, Prunus Mume of Siebold and Zuccarrii as the probable species to which belong the Japan plums, if they are not really off-shoots from the well-known species of our gardens, P. domestica. We have not their work to refer to, but Plate XI., Volume I., is cited as having an illustration of the species. In Thunberg's *Flora Japonica*, it is supposed to be the same as the apricot, Prunus Armeniaca of Linnæus; but the authors of the work above cited say that it is distinct from that. Still we should suppose that the trees in foliage and fruit must somewhat resemble the apricot, or Thunberg could not have mistaken it. Not having seen living or dried specimens of the plant, we cannot tell how the Japan plums in cultivation in the South or California accord with this character.

Thunberg says in Japan this P. Mume makes a very large spreading tree, with leaves somewhat heart-shaped at the base, ovate, acuminate, unequally serrate and smooth. The flowers are sessile and appear alternately along the last year's branches; the petals obovate, concave, obtuse, white, spreading, and falling early; the white, erect filaments, shorter than the petals. He does not speak of the mature fruit, but the "germen" or lower portion of the pistil that ultimately becomes the fruit, is noted as being pilose, which is characteristic of allies of the apricot; the "germen" of the true plum being smooth. According to Thunberg it is known in Japan as Kjoo, and more commonly Kara Momu. The authors above cited call it Mume and Momi, which we see has been adopted for its specific scientific name. In this work no mention is made of Prunus domestica, our garden plum, being in Japan. If they had been there many years, some plants would undoubtedly be by this time "spontaneous." Notwithstanding the seeming differences between the descriptions we read of Kelsey Plum and the Mume Plum, the indications are that the Japan Plum of our gardens is a form of this Chinese Plum, rather than of our garden plum. Franchet and Savatier say that it is cultivated everywhere in Japan, and it seems to be the only 'plum of which this is said.

GARDEN PLANTS AND WILD FLOWERS OF MT. SINAI.—A traveler says: "On Mt. Sinai itself is a convent at about 5000 feet above sea level, and in the gardens here were cypresses, oranges, figs, olives, date palms, and grape-vines in cultivation. Near this convent the maiden-hair fern (Adiantum capillus-veneris) was seen, and date palms exist in cultivation at a height of about 5500 feet. A thick, velvety-leaved mullein was common, and Labiates, such as Phlomis, Nepeta, Origanum, Teucrium, and Mentha, filled the air with perfume, and, in profusion, were equal to all other vegetation."

AGE OF THE BIG TREES OF CALIFORNIA.—A Boston correspondent refers to some articles that have recently appeared in scientific magazines, denying that the age of a tree can be told by its circles of wood,—insisting that trees often make several a year, and inquires if this does not invalidate the generally accepted view that the big trees of California are several thousand years old.

We have seen nothing that seriously invalidates the belief that trees make one conspicuous annual circle of wood each year. There are a number of brood circles of more or less distinctness in the annual growths of many trees, but the last circle of the annual growth, usually of small cells, and the first brood of cells at the growing season, usually the largest, make an easily seen annual division in most cases.

At any rate, when the Editor was among the "big trees," this particular question presented itself for solution. It was thought best to test the annual circle question by actual facts. Among pines and spruces, any practiced nurseryman can tell the age by the cycles of branches. The branches that push out just below the terminal bud of each year's advance are very strong,—those above and below each of these cycles are weak. It is only necessary to look at the nearest white pine or Norway spruce, to see that the age of these trees can be readily told. Young coniferæ, cut down in the Nevada mountains, of from twenty-five years and upwards, as calculated by these cycles of branches, invariably gave the same number of annual rings in the trunk. No opportunity occurred to test a young Sequoia this way, but a test was made by taking the girth of one that was certainly about 25 years old, and this growth about corresponded to the girth of the 25 circles of wood in the interior of a Sequoia stump. All these tests rendered it absolutely certain that the annual growth could be depended on for the age of the trees.

Looking at the circles, it was evident that the tree grew more rapidly in the earlier life than later. A narrow slab from the outside, 2.75 of an inch thick, gave 65 rings. The same space near the centre gave 30 rings. This gave for the average growth of 2.75 inches 47 rings. The stump was 28 feet in diameter. This gives 4855 lines across the stump, and two lines for each year, or measuring only from centre to circumference, instead of wholly across, the age of the tree would be about 2427 years.

Without any regard to the articles that have recently appeared, the Editor is quite satisfied with his own judgments, as founded on the facts above given, and has not the remotest doubt of the correctness of the popular impression as to the great age of the big trees.

THE HEMLOCK SPRUCE OF THE HIMALAYAS.—It is interesting to note that there is a species of hemlock spruce in North Carolina, different from that which prevails through other portions of the East, though very closely resembling it. On the Pacific slope there is another hemlock spruce very much like the Eastern one, and in Japan another,—all nearly alike and yet different. They all make excellent timber trees. Of the Himalayan one, Abies or Tsuga Brunoniana, a correspondent of the *Gardeners' Chronicle* thus writes:

"On another occasion, in the Lachen valley of Sikkim, I measured a spruce that was 28 feet in girth and 120 feet in height. Nor were these very exceptional dimensions, though they greatly exceed what prevails in the Darjeeling district of Sikkam, for Mr. Gamble in his list of the trees, shrubs, and large climbers of that region, gives 60 to 80 feet as the average stature of this tree, and 10 to 15 feet as the average girth 4 feet from the ground.

"The Himalayan hemlock spruce does not extend westward beyond Kumaon, where, according to Madden, it attains a height of 70 to 80 feet, and yields an inferior timber; eastward it extends into Bhotan, where Griffith met with it at 6500 to 9000 feet above the level of the sea."

ON THE STIPULES OF MAGNOLIA FRAZERI.—At a recent meeting of the Academy of Natural Sciences of Philadelphia, Mr. Thomas Meehan exhibited some fresh flowers of Magnolia Frazeri, Walter (M. auriculata, Lamark), and said that when he contributed the paper on the "Stipules of Magnolia and Liriodendron" to the Proceedings of the Academy in 1870, he had not had the opportunity to examine fresh flowers of this species. It was not common in cultivation, from the fact that the plants grown rarely produced seeds, and there had been little opportunity to get seeds from its North Carolina home. On his grounds of late years a specimen had commonly borne flowers, which appeared very early, following immediately the flowers of the Yulan, and were as large and sweet as that species of China.

A point made in the paper referred to was that the petals of Magnolia were not modified leaves, as the petals of flowers in Morphological treatises would be broadly stated to be, but rather modified stipules, in which case the petiole and leaf blade had wholly aborted. At the time of its appearance Dr. Asa Gray, to whose kindly criticisms on this and other papers he had been so often deeply indebted, wrote expressing his interest in the paper, and saying that the observations confirmed the views of some German observer, whose name he could not recall, that the petals of many flowers were but modified stipules.

Mr. Meehan had not been able to meet with the name of the author or of the paper referred to by Dr. Gray, or the tenor of the author's views. Indeed, his observations and those of the author referred to, must have been wholly overlooked by their co-laborers, or else the views have not commended themselves to their good judgment. For his own part the subsequent observations of nearly twenty years had convinced him that the petals of most flowers should be considered rather enlarged stipules or thinly dilated bases of petioles, rather than modified leaves as we should understand this term. In many species of roses, especially in Rosa Kamtschatica and Rosa cinnamomea, the stipules could be noted increasing, and the size of the leaf blade diminishing on the branch as it approached infloresence. Often the tips of the sepals would develop to minute leaf blades; and in a few instances he had seen the same appendages on abnormal petals. Often the stipules, especially in Rosa Kamtschatica, would have the red colors of the petals, when at the nodes, immediately below the axis from which the peduncle proceeded. There could be no possible doubt in the minds of those who would carefully compare, and watch for occasional aberrations, that the petals of the rose were rather transformed petals than complete leaves.

Precisely the same process of development from stipules to petals could be traced in some Leguminosæ, and especially in the common Red Field clover.

When vegetation was arrested in its growth and bud scales were formed for the protection of the growth germ for the next season, it was the stipule or dilated base of the petiole that formed the scale. This was evident to those who watched the bursting of the growth buds in spring of the species of Fraxinus, or of the Dwarf Horse chestnut, (æsculus parviflora,) common in gardens.

The formation of petals for the protection of the reproductive germ, was also the result of arrested vegetative growth, and we may safely assume that the same law operates on the stipules and petiolar bases, in the one case as in the other.

This Magnolia confirms these views, as already indicated in the paper referred to. The stipules increase in size, and the development of the leaf blade is arrested just in proportion as the true petals are approached, until the last one preceding the true flower is nearly as large as the petals, and of nearly their form and character. In some cases, it appears as a perfect petal, with not a trace of leaf blade left. The true sepal or petal has lost all trace of petiole or blade; it is broadened at the base, and, we see, cannot be aught but the stipule modified.

The fact that the petals of flowers are rather the bases of petioles or stipules, than modifications of full typical leaves, may not only be proved by such observations as have been referred to, but accords with that philosophy which would expect to find an uniform law result from uniform causes. If, as cannot be doubted, the check to vegetative growth produces a bud scale out of a stipule, the check to vegetative growth should produe a petal (a flower scale) out of the same typical form. The theory gives to morphological law a harmony of action that is wanting without it.

THE RESURRECTION FERN.—This, in Florida, is the Polypodium incanum. It grows on trees, and curls up as if dead in a dry time, but unfolds and gets beautifully green when a dry time comes. It grows wild up to the banks of the Potomac.

SUGAR IN CHINA.—At a recent meeting of the Botanical Section of the Academy of Natural Sciences, Mr. Thomas Meehan read the following extract from a letter of Miss Adele M. Fielde, a missionary in China. The letter is dated from Swatow: "My attention has lately been called to an error, existing apparently in many minds, concerning the plant from which sugar is made in China. A late consular report from Canton, says the plant is a species of sorghum, and in the American Cyclopædia (Appleton, 1863) the article on sorghum appears to me to convey the same idea. I send you to-day flowers of the plant cultivated very extensively for the sugar in the neighborhood of Swatow, and which is the source of the chief export of this treaty port. It seems to me no sorghum, but by the description in botanical works, the true Saccharum officinarum. Tell me whether it differs from the plant from which sugar is made in the Southern United States. Propagation is from cuttings, a section of the culm a foot long, being set out at each planting. This is done in February, and is ready to be cut for pressing out the juice eleven months later. In the fourth year the stubble is removed, and new cane is planted. It is not allowed to flower, as the cultivators say it spoils it for use in sugar making." Mr. Meehan said he could scarcely understand how the idea should get currency that sorghum yielded the sugar of China, for though the native country of the true sugar cane is unknown, the civilized world is indebted to China for the first knowledge that what we know as sugar could be extracted from the cane. Manufactured sugar from this cane was known in China before it was known in Europe. As for sorghum, though sugar could be made from it, it had been found so unreliable for that purpose, depending apparently more on some chemical accident than vital power, that it was doubtful if sugar in any quantity had ever been made from it in China or anywhere else. Certainly the specimens sent by Miss Fielde were of the true sugar cane, as grown by us in the Southern States.

THE BED BUG.—They have charged us with introducing the Phylloxera to the grape-vines of Europe, and now they are insisting that the bed bug also traveled eastwardly with American lumber after the great fire of London in 1666.

They, in the old world, discover every generation or two that the earlier translators of the Bible translated it incorrectly for us,—that only the last versions are the true ones, and the older ones wrong. If this had not been so, we could appeal to the older versions to prove that it must have been known to the Hebrews, for one of their versions gives in Psalm xci, 5, "Thou shalt not be afraide of any bugge by night."

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

THE GOLDEN ROD.—

"Open the bars and make me room,—
Let me wade, waist-deep, in the yellow bloom,
Let me revel at will, let me gather my fill,
Let me touch their plumes with reverent hands.
Let me tread where the wealth of blossom stands,
With the pomp of gold, in the glowing lands.
Fine as feather and soft as down
Is its petaled plume,—the very crown
Of the fair and the fine and the rare design!
Fair as the ore, when wrought and rolled,
Fine as the fretting of filagree gold."

—*Jennie Maxwell Paine.*

S. B. PARSONS.

(See Frontispiece.)

In our annual chapters on the work of authors in American Horticulture, the name of Samuel B. Parsons will find an honored place.

It must be going on forty years since the writer had placed in his hands "*Parsons on the Rose.*" The pleasing style and manner of treatment made an impression that has never been obliterated. It did seem then that even Anacreon might pour out his soul more joyously, after perusing a book of roses, such as this. A new edition appeared some twenty years later, with, under the publisher's advice, much of the "sentiment" cut out. This cutting has been no gain. To-day the first edition is the most highly prized. It is a great mistake to decry sentiment. History tells us the sight of the stars and stripes in the early battles for the Union, brought tears to the eyes of those who fought for secession, and did more to strengthen the ranks of the Unionists than their numbers or resources. What is there in a bit of bunting? It is sentiment rules the world. A new edition is, we believe, in preparation,—and we will venture a hope, *sub rosa*, that the genial author may be allowed to follow his own instincts and return to his first love!

Samuel B. Parsons was born at Flushing, Long Island, in 1819, in an old ancestral home dating back 150 years.

In 1839 there was the mulberry craze. Everybody planted. The lad of 20 years old was infected. He carried the fever to St. Croix, set out 25,000 mulberry buds, called a convention, and the silk excitement grew to its proportions in New York. The year following he travelled extensively through the West Indian Islands. On his return he commenced the nursery business on the ancestral farm. In his twenty-sixth year he took a voyage to Europe to study the horticulture of the Old World. The following year we find him adding to his experiences by exploring Florida. Palatka was then but an old barrack, and Jacksonville an obscure hamlet. Ten thousand dollars would have bought all the land within a mile radius in both. The whole State was a howling wilderness. He bought 160 acres near Blue Spring for $160. Orange trees were growing in Florida gardens, but so eaten by scale as to be practically worthless. To-day—well! Mr. Parsons must glory in the change, as all do who have had any hand in bringing it about.

In 1859 we find him again on the Atlantic, commissioned by the United States Government to investigate the agriculture and horticulture of Sicily and the Ionian Islands. His reports appear in the report of the Agricultural Department of that period.

As a horticultural missionary, preaching the love of the beautiful and intelligent, as well as the mere routine of material prosperity, Mr. Parsons is well known over the whole land. Many have been the addresses he has given on that subject. Once in Florida he made a strong plea for his cause. He was rather taken down, when, after his earnest discourse, some of his auditors rose and commented on the folly of his efforts; what they wanted, they said, was something to eat and something to make money out of. They have both now, and flowers and gardens besides. He introduced for them the Navel Orange, over which the money makers are now excited; though they let his thousands of Camellia and other rare plants die on their hands. He started to show them what could be done to make money as well as make beauty, and his profitable orange nursery alone paid him back all he had ventured for their instruction.

It was once his hope to get the Government to establish an experimental garden in Florida, but his efforts were blighted just before final success. In like manner his efforts for roof gardens failed from time to time, but he has lived to see abundant evidences, in New York at least, of final success.

Another effort of many years has been to convince orchardists that their plantations may be just as well made beautiful as not. Landscape gardening with fruit trees, in order that a fruit farm may be made beautiful, is an idea just as fully bound to grow to final success as his efforts to make Florida farms, as well as Florida woods and waste places "the land of flowers."

Very successful, also, have been his efforts to introduce a knowledge of our rarer trees and shrubs. Possibly to him, more than any one in our country, is horticulture indebted for a knowledge of the Stuartia, Virgilia, Andromeda arborea, Japan Maples, Rhododendrons, and hosts of other beautiful things, now getting, through his efforts, generally grown.

In the wonderful progress of our country in grape culture, he has also taken a successful hand. When the demand for the Delaware was so great, he grew and sold as many as 200,000 plants in one year. During the time when the American grapes were rising to such prominence, he raised of different varieties over 800,000 in each year. The houses for grape propagating were eventually turned into Camellia and Rhododendron houses, for which they continue in use.

Huge winter gardens for plants that can endure a temperature nearly to freezing, and large enough to have some beauty of arrangement in the interior of the house, has also been a favorite theme which will no doubt eventually be realized.

On the lamentable death of A. J. Downing, many eyes were metaphorically turned towards Flushing for a successor to the great leader that had done so much to raise horticulture in America to a high pinnacle of culture, refinement, and dignity. But few can stand the continual drag of editorial life, and at the same time bear the harassing wear of business cares. He declined the editorial chair, which was for a short time so well filled by Barry, till it was found too much for even his iron constitution, and John Jay Smith took charge of the *Horticulturist*.

His three score and ten will soon be reached. Horticulture cannot expect much more hard work from him. But it is a satisfaction for him to feel and for us to acknowledge, that he has left his mark on the pursuit we all love so much, and that what he has planted in this way will grow and bear good fruit long after he himself has passed away.

The Next Volume of the Gardeners' Monthly.—The publisher believes there is no other magazine in the world which gives more for the low subscription price than the Gardeners' Monthly. He has been glad to do this because it gives him some claim on the good will of his subscribers to make it known among their friends. The lovers of gardening are so scattered that the ordinary vehicles for advertising can not be profitably used. It depends on the good will of its friends. Any additional subscriptions, while sending one's own, the publisher highly appreciates.

Horticulture in America.—M. Charles Joly, ex-Vice-President of the Horticultural Society of France, in a note on the School of Arboriculture and Viticulture of Geisenheim, pays a high tribute to America. He shows that with all the mineral necessary to the arts, a climate and soil that will produce everything, and a unity of language and public policy over the whole northern continent, it must in time be independent of the rest of the world. He gives figures of the enormous product in fruit of California alone, as enough to excite the wonder of the world.

Epitaph on a Child's Tombstone.—The Editor unites in the regret of a correspondent who says: "Pity you should by forgetfulness spoil the measure of the old epitaph :

"If so early I am done for,
I wonder what I was begun for."

A Botanic Garden in California.—Some time ago we noted a project for starting a Botanic Garden on a fine scale in California, the plan being developed from the fertile brain of Mr. Emery C. Smith, a young man of considerable talent and with much experience in the Eastern states. We judge from California papers that the project is meeting with great success. Dr. Bouvard, the president of the University of Southern California, proposes to have in this garden, their scientific and industrial school.

Nurseries in Utah.—The nurseries in Utah are in a flourishing condition. According to the *Salt Lake Journal of Commerce*, over 100,000 trees were shipped from the vicinity of Salt Lake City to Colorado alone. Flowers are also successfully shipped. Mr. John Reading, who built the first greenhouse in Salt Lake City, received numerous orders from other states and territories, notably Idaho, Wyoming, Montana and Nevada.

Hog-Plum.—This is the vernacular in Florida for varieties of Prunus umbellata, as "Wild-Goose" is to a variety of Prunus Chicasa.

Indian Corn.—We saw an intelligent man recently astounded that he could not answer his child's question, what was "hoe-cake,"—some one had just been singing to him that "Poor Uncle Ned"

"Had no teeth for to eat the hoe-cake,
So he had to let the hoe-cake be."

It seems that there are many like this child's father, who do not know what they should know about things around them, while they can tell everything about what they have seen in London and Paris.

We may perhaps get some thanks for the following sketch of the uses of so homely a thing as Indian corn :

"'It is the most certain of all crops,' says the Report on the Agriculture of Tennessee, 'requires the least amount of labor in its culture, and comes to maturity in the shortest time. The pith of the matured stalk of the corn is esculent and nutritious, and the stalk itself, compressed between rollers, furnishes what is known as 'corn-stalk molasses.' This grain requires also the least care and trouble in preserving. The machinery for converting it into food is also exceedingly simple and cheap. As soon as the ear is fully formed it may be roasted or boiled, and forms thus an excellent and nourishing diet. At a later period it may be grated, and furnishes in this form the sweetest bread. The grain boiled in a variety of modes, either whole, or broken in a mortar, or roasted in the ashes, is much relished.

"If the grain is to be converted into meal, a simple tub will answer the purpose best, as the meal least perfectly ground is always preferred. A bolting cloth is not needed, as it diminishes the sweetness and value of the flour. Boiled in water it forms the dish called 'hominy,' eaten with milk, honey, molasses, butter, or gravy. Mixed with cold water, it is at once ready for the cook ; covered with hot ashes, the preparation is called 'ash cake ;' placed upon a piece of board, and set near the coals, it forms the 'Johnny cake ;' or managed in the same way upon a helveless hoe, it forms the 'hoe-cake ; put into an oven, and covered over with a heated lid, it is called, in a large mass, a 'pone,' or loaf. It has the further advantage over all other flours that it requires in its preparation so few culinary utensils, and neither sugar, yeast, eggs, spices, soda, potash, &c., to qualify or perfect the bread. To all this it may be added that it is not only cheap and well tasted, but it is unquestionably the most wholesome and nutritious food. Some of the largest and healthiest people in the world have lived upon it exclusively."

Only a Thistle.—In popular opinion only Scotchmen and donkeys are fond of Thistles, but if so we must say they show very good taste.

Among our hardy plants there are few finer subjects in point of foliage or flower than some of our common Thistles. There are few more beautiful plants than the Musk Thistle, Carduus nutans ; while the large Spear Thistle, C. lanceolatus, and C. eriophorus are really noble plants. C. Marianus, too, with its spotted leaves stained with drops from the Virgin's milk, according to the Catholic legend, is a grand plant for the back rows of the herbaceous border. The Cotton Thistle, Onopordon Acanthium, is another stately plant, with its foliage densely covered with white cottony hairs. In the present issue we give a figure (fig. 61) of another Thistle, Cnicus altissimus, a common plant in the United States, for specimens of which we are indebted to Mr. Wilson Saunders, who tells us that he received the seeds from Kew, where it forms in its season one of the ornaments of the herbaceous ground, the seedlings being placed in the open ground, where, in the course of the summer, the plants attained a height of 11 feet, while at 4 feet from the ground the plant was 7 feet through. The form of the plant is very symmetrically conical. The flowers opened from above downwards. The lower leaves measured some 2 feet in length and a foot or more in breadth. Reverting to the Scotch Thistle, we may recall to our readers the interesting communications of the ex-Curator of the Royal Gardens, Kew, and of Mr. Edwin Lees, in our volume for 1873, pp. 365 and 436, from which it appears that no authentic information relating to the use of the Thistle as a badge or emblem is known prior to 1488—the story of the Danes attempting to invade a Scottish camp in the night, and pricking their feet with the Thistles to such an extent that they were forced to cry out and so reveal their presence, having no foundation. The historical evidence is that the Thistle was first used as the badge of Scotland by King James IV. In 1514 James V placed the representation of the Thistle on his coins. James VI added the proud motto—"Nemo me impune lacessit." In Scotland Onopordon acanthium is generally accepted as the plant (see illustration in *Gardeners' Chronicle*, 1876, vol. v., p. 140), but it is curious to find from Mr. Lees, who quotes Dr. Johnson, that "initiated gardeners" understood the Milk Thistle, Carduus Marianus, to be the true plant, and that they therefore (why therefore ?) usually stuck the heads of the latter on the strong spines of the Onopordon or Cotton Thistle. It is doubtful whether either the one or the other of the plants named is a genuine native of Scotland.—*Gardeners' Chronicle, April 5, 1879.*

Poisonous Honey.—Though the following extract from the *Journal of Horticulture* is rather long, we give it place from the importance of the subject :

"In several localities I am acquainted with (one at Greenock, another in the Highlands), the bees annually, about the month of May, die in great numbers both out and inside the hive, on their return from the fields. They expire convulsively after the manner some animals die from strychnine poison. At both places Rhododendrons are plentiful, but although some attributed the fatal results to the honey collected from these shrubs, I never ventured an opinion. One gentleman at Greenock who has paid particular attention to this calamity for many years, tells me that he observed it occurred only during the east winds, about the time previously mentioned, and only when the wind blew directly over certain sugar refineries, but that at other seasons, when the wind blew in the same direction, the bees were not affected. How is this ? Will the carbonic acid gas emitted at these works be more fatal to bee life during spring that at any other time ? Is it a disease, or do certain flowers secrete honey that is poisonous ?

"We have various accounts of people being poisoned with honey—to wit, the Grecian soldiers, and later, the fatal cases in America. It is of great importance to the bee-keepers of this country that this question should be thoroughly understood. If the rumor spreads abroad that honey is sometimes poisonous, the public will cease to use it, and bee-keepers will find a difficulty in disposing of honey, however wholesome it may be. In the first place, then, is there any poisonous honey that bees will gather, and, if so, have the bees an immunity from certain poisons ? If we believe that Rhododendrons or Azaleas yield poisonous honey, and are the cause of the death of the bees aforementioned, then they have not an entire immunity from death through sipping the nectar, even although it goes no further than the stomach, as we see poison acting on fowls. In the case of the honey that poisoned the Grecian soldiers, the bees could not have been injured, neither at the gathering nor after, because if so, there would have been no honey stored. Whichever way we look at the evidence it is mysterious and conflicting. I can offer no solution whatever, but I suggest that it is possible that the poison may not be in the honey, but in the pollen. While the Grecians were only intoxicated, the Americans were killed.

"We want evidence, however, whether the honey was eaten in a liquid state or direct from the comb. If the latter, then I think it probable that the poisonous effects may be traced to pollen, and that honey is safe at all times to be used when from it. Many people who never saw bees do not know honey from brood comb, and I saw some policemen at an exhibition eat brood and apparently relish it greatly. I only regretted that it was out of my power at the time to let them taste genuine honeycomb."

We call attention to the paragraph because it seems strange that experienced bee-keepers do not know that bees are short-lived. They live but a few months. All those that live over winter are all dead before mid-summer. They usually die in harness, and away from home. They may be found dead in large numbers under any flowering trees in the spring and early summer. We have seen them under the Wistaria, Yellow locust, and Catalpa, and others which we do not at this moment recall. If the poison honey would kill or injure men, it would also do the same with the bees feeding on it. It has always seemed to us strange how the idea of poison honey ever got weight. Nor is the matter mended by suggesting that a young bee would be any safer under poison bee-bread than poison honey. As for those Greeks, it is surely time everybody knew that the Rhododendron of the ancients was what we now know as the Oleander.

The "Americans killed" is news. We will venture to say to our English brethren that "poisoned" honey never killed an American. We have not even seen any statement that such an event occurred, and it surely would have had wide circulation in our own papers, had there been any serious basis of fact for such a story. The "poison honey" idea is growing very stale.

Edwin Lonsdale.—The three large rose houses started by Edwin Lonsdale near Chestnut Hill, Philadelphia, were all completed in good time, and prove to be successes. Each is 250 feet in length. One huge boiler serves the whole establishment.

H. H. Berger.—This well known firm, that has gained a good name in the nursery business of the Pacific coast, is conducted by a lady, Mrs. H. H. Berger.

Hon. Joseph Chamberlain, the famous English Parliamentarian, is very fond of Horticulture, and has a well kept garden establishment near Birmingham. The grounds are beautifully laid out, having been laid out by Milner. There are numerous ranges of glass for exotic flowers, and fruit culture under glass is carried on to a great extent.

John Laing.—This is one of those intelligent British gardeners of whom the Old World is proud. In his early years he became eminent in botanical as well as horticultural pursuits; he has since been a member of several prominent nursery firms —but is best known as a hybridizer of flowers. Many of the wonderful races of plants that adorn our gardens and greenhouses, had their origin with him. The tuberous Begonias had an early start from his hand. He was born near Brechin, in Scotland, in 1823.

Francois Lacharme.—Mr. Jean Sisley furnishes us with the following memorandum concerning this distinguished rosarian:

"Francois Lacharme was born the 28th of January, 1817, at St. Didier sur Charonne-Ain, France; died the 5th of November, 1887, at Lyon, France. His father was an agriculturist and desired his son to follow his profession, but the Roses in his father's garden had at an early age attracted his special attention and at last his father consented to his desire and placed him in 1836 as apprentice at M. Poncet, horticulturist at Lyon.

"In 1839 he went to Paris, with a recommendation of Mr. Plantier, the rosarian, to Mr. Pirolle, the founder of the Bon Jardinier, who obtained a situation for him in a Dutch horticultural establishment at Paris, in the neighborhood of the Palace of the Luxembourg, the gardens of which were then directed by Mr. Hardy the well known amateur of Roses, and where F. Lacharme went very frequently to admire them.

"In 1840 Mr. Plantier wrote to him to offer him his Rose establishment, which he accepted and assisted with his counsels; he began to sow Roses and soon obtained a then very remarkable variety which he named Hybrid Remontant Ernestine de Barante, which he sent out in 1843, and since that time he has not ceased to sow Roses very extensively and has obtained a great number of splendid varieties, which still ornament the collections of amateurs in all countries.

"Francois Lacharme was loved and esteemed by all those who knew him, because he was a very laborious and intelligent man and of the strictest honesty."

Miss Susan Poissonie.—This young lady was getting to be quite famous in Europe as a flower painter, and was particularly well known by the beautiful Roses painted for the *Journal des Roses*. She died in Paris on the 8th of July, in her twenty-sixth year.

Thos. U. Walter—the architect of the Capitol building at Washington, and other famous works, whose death at 84 has recently been announced, was fond of horticulture, and at one time had a suburban residence with beautifully laid out grounds at Germantown.

In the Heart of the Sierras.—Every traveler through the Yosemite knows Mr. John M. Hutchins, who was among the earlier discoverers of the beauties of the Yosemite, and who is now in charge of the National Forest of Big Trees. It is not often that just the right man writes just the right book, but with him for the author of this work, with his twenty years' experience, the "fittest" has certainly come to the front this time. From sample pages we have seen it will be a welcome book to the California traveler.

Entomological Society of Ontario—Seventeenth Annual Report.—Contains a full account with drawings of the leading insects injurious to the cultivator in Ontario. An exceedingly valuable issue.

Missouri State Horticultural Society.—Mr. Joly, our French correspondent, marvels at the wonderful growth of fruit culture and some other branches of horticulture in the United States. Much of this progress, we think, is due to the admirable work of State Societies, as well as our horticultural press, which scatter knowledge far and wide. Such a work as this Twenty-ninth Report of the Proceedings of this Society, is very suggestive as to how the good work goes on.

Lindenia.—The fifth part of the third Volume is just to hand and has for illustrations the following orchids:

Miltonia spectabilis Moreliana.—This variety of one of the most beautiful orchids was introduced by M. Morel, of Saint Mandé, in 1846. It was found in Brazil near Serra de Estrella, and is so distinct as to be thought a good species by some.

Paphinia Lindeniana.—This is from Central America. It is an entirely new species received only in July last by the International Horticultural Company. It was discovered by M. Bungeroth near the sources of the Orinoco.

Odontoglossum crispum Trianæ.—This came from New Granada. It is regarded by M. Linden as one of the most beautiful forms of this most beautiful species. It is a much larger form than the type.

Bulbophyllum grandiflorum.—This is one of the most grotesque forms of orchids known to cultivators, and it is very beautiful in its grotesqueness. It is from the woods of New Guinea. It flowered for the first time in Europe in the houses of the International Company in August last, and then went to England to enrich the collection of Sir Trevor Lawrence, of Dorking.

The whole set of illustrations make a beautiful quartette. Besides the paintings and descriptions, there are full cultural details for each species.

Fences, Gates, and Bridges.—By George A. Martin. Orange Judd Company, New York. This is a particularly useful compendium of all that is known of the subject of which it treats.

Catalogues.—Lovett, J. T., Fruits, Fall, 1887, Little Silver, N. J.; Rains, Michael & Co., Dutch Bulbs and Seeds, London, England.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

Chrysanthemum Show of the Pennsylvania Horticultural Society.—It is not easy to note such matters in a local exhibition that will interest the readers of a magazine scattered over a whole continent. Still we think we can make a few points that will come within this scope, though we shall have to omit a great deal of purely local interest.

First, it is encouraging to say that there was exhibited a great improvement in the art of growing the plants. Exhibitors generally had a system of growth and training at which they aimed, and this led to a regularity in appearance, which indicated better than anything that it was cultural art, and not a chapter of accidents that had produced the good results. This was particularly evident in the $200 first premium taken by Craig Brothers. These were trained to a rather flat standard, about 2½ to 3 feet high and about 4 feet wide, and an average one had on it 160 flowers.

Another great improvement was the evident care taken to have the flowers produced on good strong stalks so as to be in a great measure self-supporting, and at the same time to have an abundance of good healthy foliage. In this respect the plants of Mr. John Kinnier, gardener to Joel J. Bailey, Esq., of Philadelphia, who took the New York Premium of $50, were among the best we ever saw. There are a great many points to be taken into consideration by a judge at a Chrysanthemum show, and awards have to be made on the average of these number of points. If other points had been equal to this one of superb culture, it would probably have ranked higher than fourth on the list. The plants were about 3 feet by 3, and had an average of 200 flowers on each plant.

In the third premium ($100), set of John Shaw, gardener to Clarence H. Clark, Esq., were some fine specimens. One of them was of the variety Enchantress, trained as a cone. It was about 4 feet high by about 3 wide. It occurred to the reporter that it would add to the interest of Chrysanthemum shows, to have premiums for different styles of training, say six best trained as cones, and six best trained as depressed spheres. The second ($150) premium went to William Dewar, gardener to Mrs. Charles Wheeler. The one conspicuous point of merit, in addition to numerous other good points, were the remarkable fine flowers. These were much larger than the blooms of the same varieties as generally seen. A plant of the beautiful white variety, Mrs. George Bullock, could probably not be surpassed in cultural skill, and was universally admired.

In the competition for single specimen plants in the various colors, most growers seemed to aim at getting very large plants with numerous flowers, without regard to well-trained specimens. Thus one premium plant of P. Conlan, gardener to Mr. P. Roberts, though only in a 15-inch pot, was 6 feet high by about 4 wide, and had about 300 flowers. The first premium, yellow, given to Mr. Dewar, for the var., Temple of Solomon, was a model of good growth. It was about 6 feet over by 4 feet high, somewhat hemispherical, with about 144 sprays, most of which had two flowers thereon.

Of peculiar varieties, a specimen of Diana in the collection of Mr. Clarence H. Clark, with the outer petals purple, and the inner ones white, suggested the idea that it might be as well for seedling raisers to aim at the production of a distinctively bi-colored race.

A good point to note was that there was far less dependence on stakes and string to make good specimens than formerly. These must be used, but they were mostly painted green, and kept out of sight as much as possible. Another good point was to note a number of new comers, trying their wings. In some cases they had "not for competition" modestly displayed. These younglings made good displays, and when they noted that some of the earlier exhibitors in the front rank of of premium takers, had to take back seats on this occasion, they will doubtless take courage and be in the ranks of the regular army of friendly fighters next year. Another improvement we are glad to record, was the almost general use of labels above the plants, so that any one could tell the variety without groping at the bottom of the pot to find the wooden label.

Another interesting matter was to note how large was the number of seedlings raised by Philadelphia growers that had evidently taken rank as standard kinds. There were also a very large number of seedlings of first-class character offered in competition for premiums. The highest was given to a variety unnamed, we believe, to Mr. W. K. Harris, who was probably the first florist to enter warmly into the modern interest in chrysanthemum culture. It was much after the style of that very beautiful variety, Moonlight, but had more lemon tint in it. A silver medal was awarded to Mr. Hugh Graham for one called Mrs. Hugh Graham. It was one with with large, broad spreading florets, with a lemon centre. One of the most novel, to our mind, though not seeming to impress the judges so much, was one called Edwin H. Fitler,—so named after the mayor of Philadelphia. It was very large, about 6 inches across—semi-double, golden, with innumerable brown pencilings, which made it look a golden bronze.

A very curious one was labelled Ellen K. Pitcher, it had but a single row of yellow tubular ray florets of great length, with only a small blade at the apex of each quill. It was pronounced very distinct, but not likely to be appreciated by chrysanthemum buyers.

The immense number of named kinds now in existence makes it very difficult to pronounce on the novelty or merits of new candidates. In the cut "sprays," Mr. John M. Hughes, Mr. Childs' gardener, there were 152 varieties. Mr. Cullen, gardener to E. P. Wilbur, Esq., of Bethlehem, Pa., had 120 kinds, and there were other large collections. People would say, surely there must be repetitions here, but a careful comparison would show no two alike.

Besides chrysanthemums, there were, of course, roses, but nothing specially new to note, but their extra fine vigorous health. Among the hybrid Perpetuals the most noticeable was the much criticised American Beauty. It may have been no good as Madam Ferdinand Jamain. Certainly as seen on exhibition here to-day, a popular vote would place it high above its comrades.

In picture books and catalogues one's mouth often waters over the mushrooms that seem covering little boxes as thick as gravel stones along the sea shore. Here was a box of the real things, just as we see them in the pictures, from the hands of Mr. P. McCaffrey, gardener at the Continental Hotel grounds.

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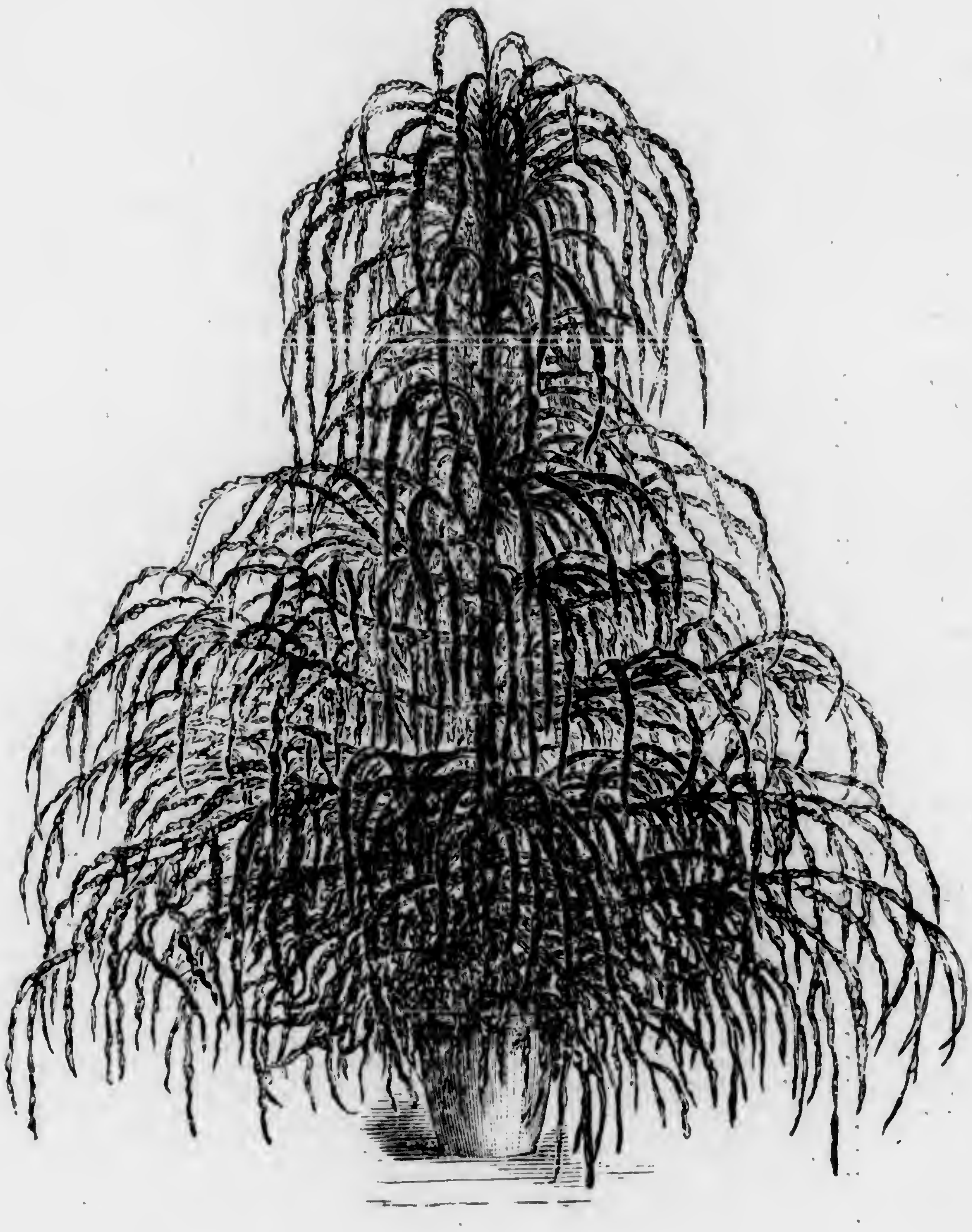

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